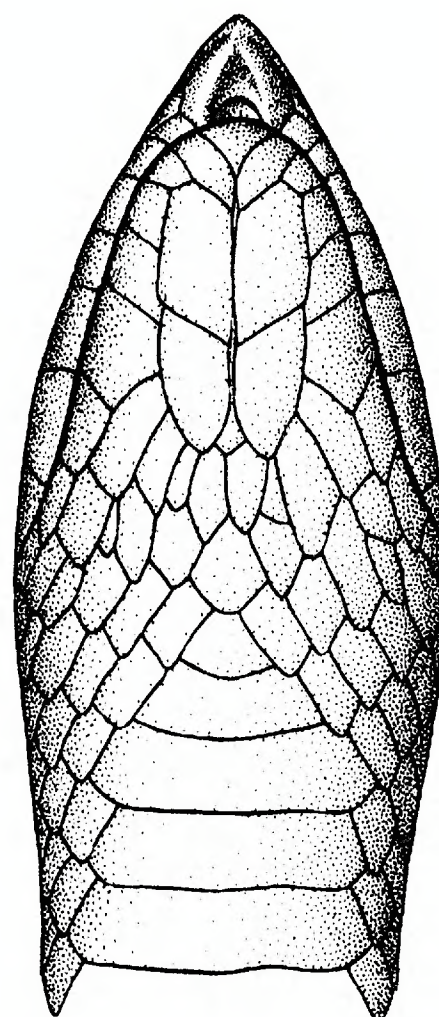
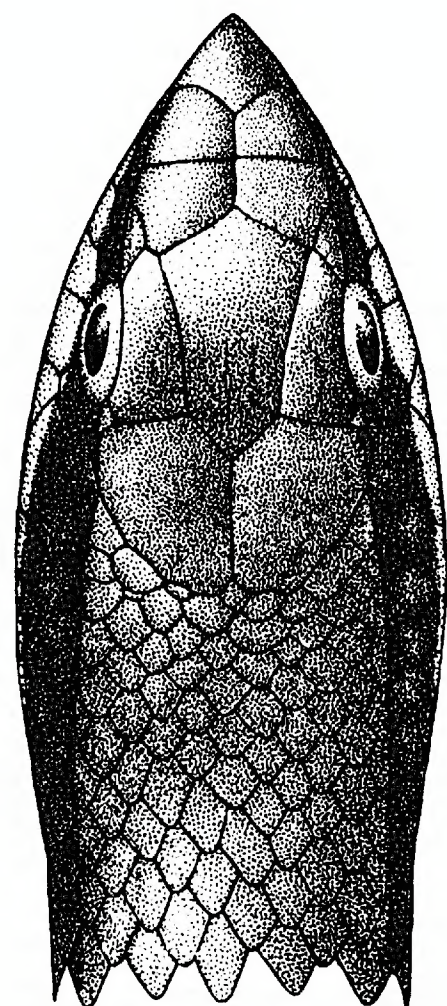
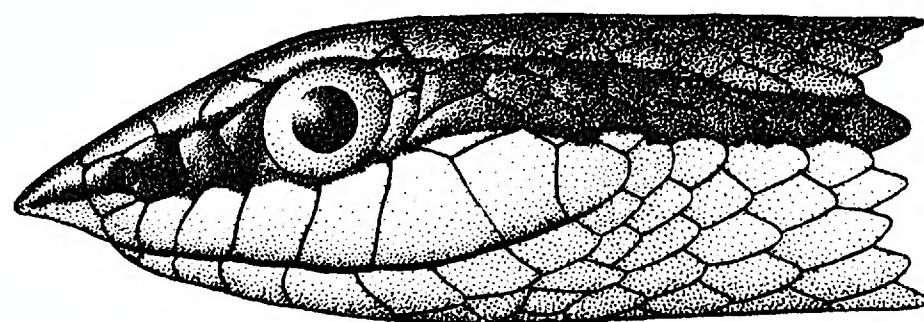

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2004 Amphibians and Lizards from Sonora, Chihuahua and Coahuila

Hobart M. Smith¹, Julio A. Lemos-Espinal² and David Chiszar³

Abstract

We report here on 21 taxa of amphibians and 40 taxa of lizards. Numerous new locality records are represented, and there are taxonomy, variation and natural history notes for a number of taxa, most importantly for *Bufo mexicanus*, *Eleutherodactylus augusti cactorum*, *Hyla arenicolor*, *H. wrightorum*, *Aspidoscelis costata barrancarum*, *Callisaurus draconoides bogerti*, *Holbrookia elegans thermophila*, *Sceloporus cyanostictus*, *S. merriami* and *Urosaurus ornatus lateralis*. *Hyla smithii* and *Hypopachus variolosus* are additions to the known fauna of Chihuahua.

All specimens reported herewith were collected by JLE during the summer and fall of 2004, and are in the Herpetological Collection of the Unidad de Biología, Tecnología y Prototipos (UBIPRO), Laboratorio de Ecología, Facultad de Estudios Superiores, UNAM, Iztacala, Mexico state, Mexico.

Amphibians

Ambystoma rosaceum rosaceum Taylor. Nos. 12668, 12860-3 are from Yécora, Sonora (28°22'4.0"N, 108°55'32.6"W), 1545 m; 13044-5, Gorogachi, Chihuahua (27°16'21.1"N, 108°32'7.2"W), 700 m; 13046, Milpillas (27°12'9.7"N, 108°38'47.3"W), 1250 m; 13073, Canelas (Chínipas), Chihuahua (27°23'39.9"N, 108°32'36.0"W), 469 m.

All are larvae except 12668, a transformed adult 77 mm SVL, found DOR. It has a profusely light-spotted pattern much as shown in Tanner (1989, p. 49). The locality is intermediate between those shown by Anderson (1978) between northern and southern Sonora.

Bufo cognatus Say. No. 12630 and another without number are from Químicas del Rey, Coahuila (27°1'13.2"N, 103°21'49.8"W), 1051 m. No other records are known from this vicinity, although it is well within the range of the species.

Bufo debilis insidior Girard. Nos. 12160-75, 12203-9, 12264-70, 12406-7, Charcos de Risa, Coahuila (26°12'32.7"W, 103°6'24.0"W), 1114 m; 12295, betw Sierra de En Medio and Rancho Nogales, Chihuahua (31°9'51.1"N, 108°34'40.3"W), 1427 m. No differences were observed among these samples; all are from well within the known range of the subspecies, although the localities are new.

Bufo mazatlanensis Taylor. Nos. 12645-6, 12653 are from Valle de Tacupeto, Sonora (28°15'20.5"N, 109°18'1.9"W), 435 m; 12790-4, Yécora, Sonora (28°22'4.0"N, 108°55'32.6"W), 1545 m; 12870-12949, km 104 on Sonora 117, betw Nuri and Tesopaco (28°3'37.3"N, 109°18'40.5"W), 532 m; 12950-2, betw Fronteras and Esquila, 49 km S Agua Prieta, Sonora (30°59'40.7"N, 109°33'22.4"W), 1136 m; 13034, 13036, Chínipas, Chihuahua (27°23'39.9"N, 108°32'36.0"W), 469 m. The specimens from Sonora extend the known range of the species about 140 km northward in that state, to the highest elevation recorded; they are typical adults.

The recently transformed juveniles from near Nuri, all about 16 mm SVL with no vestiges of a tail, were taken 26 July. The parotoid glands are clearly distinguishable. On the basis of their shape, the presence of a light vertebral stripe, the mottled lips and dark sides of abdomen their identification is assured. They show more clearly than the adults the distinctive row of tubercles along the upper edge of the dark sides, much as in *B. valliceps* and *B. nebulifer* of the Atlantic coast. The mottling of the lips and the dark band on the sides of the body are more pronounced in the juveniles than in the adults, and the chest and often the throat are densely pigmented, unlike the adults.

Bufo mexicanus Brocchi. Nos. 12788 and 12795 are from Yécora, Sonora (28°22'4.0"N, 108°55'32.6"W), 1545 m. These specimens possess the features characteristic of the species, including the absence of cranial crests, presence of a black inner metatarsal tubercle (even in the juvenile 30 mm SVL), and ovoid parotoid glands half as wide as long. The venter is unmarked in the adult; a few black flecks are on the throat and chest of the juvenile. The latter has eight small thickenings on the abdomen, involving 2-4 granules, perhaps produced by mites.

The species is known in Sonora only from the vicinity of Yécora, where it was mapped by Price and Sullivan (1988).

Bufo punctatus Baird and Girard. Nos. 12176-7 are from Químicas del Rey, Coahuila (27°1'13.2"N, 103°21'49.8"W), 1051 m; 12200-2, 12263, 53 km S Químicas del Rey, Coahuila (26°38'44.5"N, 103°9'13.4"W), 1084 m; 12647-50, Valle de Tacupeto, Sonora (28°15'20.5"N, 109°18'1.9"W), 435 m; 12784-7, 12789, Yécora, Sonora (28°22'4.0"N, 108°55'32.6"W), 1545 m; 13039, 13054-5, Chínipas, Chihuahua (27°23'39.9"N, 108°32'36.0"W), 469 m.

All eastern specimens (Coahuila) are uniform light tan above, whereas all western specimens (Sonora, western Chihuahua) are dark gray above.

Eleutherodactylus augusti cactorum Taylor. Nos. 12780 and 12783 are from Yécora, Sonora (28°22'4.0"N, 108°55'32.6"W), 1545 m. Both are half-grown, 47 and 49 mm SVL, and have lost all evidence of the broad light band across the dorsum that is characteristic of juveniles. The dorsal pattern resembles that of *E. tarahumaraensis*, but a

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well-developed intertympanic fold is present.

The present locality is the only one for the species north of the extreme southern tip of the state (Zweifel, 1967).

Gastrophryne olivacea (Hallowell). Nos. 12136-9 are from Río Mayo at the gates of Presa Mocuzari, Sonora (27°13'25.6"N, 109°6'30.6"W), 90 m; 12329, 12667, Charcos de Risa, Coahuila (26°12'32.7"N, 103°6'24.0"W), 1114 m; 12614, Tacupeto, Sonora (28°15'20.5"N, 109°18'1.9"W), 435 m; 12655-66, Yécora, Sonora (28°22'4.0"N, 108°55'32.6"W), 1545 m.

Hyla arenicolor Cope. Nos. 12779, 12781-2 are from Yécora, Sonora (28°22'4.0"N, 108°55'32.6"W), 1545 m; 13058, Huisivo, Chihuahua (27°23'39.9"N, 108°32'36.0"W), 469 m. Both localities are well within the known range of the species.

Although found in the same general area where *Gastrophryne* and *Hyla wrightorum* were breeding in huge numbers, this species did not participate in the breeding choruses; all were found under objects and were scarce.

Hyla smithii Boulenger. Nos. 13037 and 13084 are from Ejido Gorogachi, Chihuahua (27°16'21.1"N, 108°32'7.2"W), 700 m. These are the first of the species reported from Chihuahua, extending the known range northward about 257 km. They are somewhat larger (36–37 mm SVL vs 31 mm) and lack the light, dark-bordered lateral lines on the body that are characteristic of the species. A dark line is present above the arm insertion, as normal, but it does not continue onto the sides of the body. Otherwise the pattern and coloration are normal, as figured in Duellman, 2001).

Hyla wrightorum Taylor. Nos. 12669-12690 and 12692-12778 are from Yécora, Sonora (28°22'4.0"N, 108°55'32.7"W), 1545 m. These are typical specimens, and the only ones reported for the state, although the species was previously reported from Yécora on the basis of a photograph (Duellman, 2001). The locality is incorrectly mapped, however, in the vicinity of Agua Prieta, whereas Yécora is south of the middle of the state near the Chihuahua border.

This species was found in great abundance after a very heavy rainstorm, along with *Gastrophryne*.

Hypopachus variolosus (Cope). Nos. 13047-8 are from San Antonio, 3 km N Chinipas, Chihuahua (27°23'39.9"N, 108°32'36.0"W), 469 m. These are the first specimens of the species taken from the state, although it has been recorded from adjacent southern Sonora. These specimens (males), with collapsed vocal sacs, appear to be adults, but at 38 mm SVL they are considerably smaller than the maximum for males reported for the species (47 mm), although about the same as those reported from Tepic, Nayarit (39 mm). The feet are about 1/4 webbed, two large metatarsal tubercles are present, and there is a fine postocular groove across the head.

The back and top of head are mostly olive brown, shading to light brown on the sides; the venter is white and with a very dim darker reticulation. The sides of the head and neck are dark brown, and some irregular dark spots are present in the sacral region and on the hind legs. The sides are weakly reticulated with brown in one, not in the other. The single vocal sac is black. Unusual is the absence of a dorsal pattern

or a median white line on body or rear of thigh; most specimens from elsewhere have a large, inverted V-shaped pattern on the back. Variation in the species is great, both geographic and intra-populational, defying recognition of two or more species in this complex, although many names have been proposed (Nelson, 1974). Nevertheless, Frost in Crother (2000) regarded the taxonomy of this complex as unsettled.

Leptodactylus melanonotus (Hallowell). Nos. 12140-6 are from Río Mayo at the gates of Presa Mocuzari, Sonora (27°13'25.6"N, 109°6'30.6"W), 90 m. All have the V-shaped interocular dark mark characteristic of the species. Males have a pair of black spines on the thumb. Of the 3 males, the largest is 31 mm SVL, the smallest 23 mm; the thumb spines are evident in all. The largest of 3 females is 39 mm. The species has been reported previously from the same area, suggestive that it may also occur in Chihuahua.

Pachymedusa dacnicolor (Cope). Nos. 12957-8 are from Valle de Tacupeto, Sonora (28°15'20.5"N, 109°18'1.9"W), 435 m. They are females, 61 and 64 mm SVL, with a few to numerous very tiny white spots on dorsum. The species was reported from the same locality by Lemos-Espinal, Smith, Hartman and Chiszar (2004).

Pternohyla fodiens Boulenger. Nos. 12633-44, 12959-61 are from Valle de Tacupeto, Sonora (28°15'20.5"N, 109°18'1.9"W), 435 m. This locality is at the extreme eastern edge of the range of the species in Sonora. Its occurrence in Chihuahua seems likely.

Rana forreri Boulenger. No. 13085 is from Milpillás, Chihuahua (27°12'9.7"N, 108°38'47.3"W), 1250 m. This specimen is a transformling 24 mm SVL with a 49 mm tail and 11 mm forelegs. The body is dark, with no visible spots, no labial light line, and the lower rear surface of the thigh is dark. The dorsolateral folds appear to be unbroken posteriorly.

Rana magnaocularis Frost and Bagnara. Ten specimens, all from Chihuahua, include 8 from the vicinity of Chínipas: 13104-5, La Loma; 13056-7, Huisivo; 13069-72, Canelas; and 13097, Chínipas (27°23'39.9"N, 108°32'36.0"W), 469 m. No. 13040 is from Gorogachi (27°16'21.1"N, 108°32'7.2"W), 700 m.

Nos. 13097 and 13105 are large tadpoles with partially degenerate mouthparts. The dorsolateral folds are broken posteriorly in all.

Rana tarahumarae Boulenger. Nos. 13041 and 13945-6 are from Gorogachi, Chihuahua (27°16'21.7"N, 108°32'7.2"W), 700 m. The dorsolateral folds are missing in all, and the largest is 95 mm SVL.

Scaphiopus couchii Baird. Nos. 11961-2 are from Ejido San Juanito, Sonora (28°19'27.5"N, 111°17'8.1"W), 9 m; 12178-94, 12210-2, 12401-5, 12616-28, Charcos de Risa, Coahuila (26°12'32.7"N, 103°6'24.0"W), 1114 m; 12631-2, Químicas del Rey, Coahuila (27°1'13.2"N, 103°21'49.8"W), 1051 m; 12651-2, 12654, Valle de Tacupeto, Sonora (28°15'20.5"N, 109°18'1.9"W), 435 m.

The dorsal pattern is highly variable, from extremes of a patternless dorsum with small, sparsely scattered black dots to a boldly reticulated pattern of narrow to coarse black lines. Most distinctive are the 3 from Tacupeto (which is at the

eastern edge of the range of the species in Sonora); two are almost totally black above, and the other has less light area on the dorsum than any other of the entire series.

Smilisca baudinii (Duméril and Bibron). Nos. 13038 and 13083 are from Gorogachi, Chihuahua (27°16'21.1"N, 108°32'7.2"W), 700 m. The few existing records of this species in Chihuahua are in the general vicinity of Chínipas, except for Riito (Duellman, 2001), which is about one degree of latitude north. The latter locality is in oak-pine forest where the species does not occur; the material must have come from a lower altitude in one of the adjacent, very deep canyons where semitropical conditions exist.

Spea stagnalis (Cope). No. 12629 is from the Zona de Silencio, Coahuila (26°38'44.5"N, 103°9'13.4"W), 1084 m. This specimen has the small, widely-spaced tubercles that distinguish this species from its related *S. multiplicata*, as pointed out by Tanner (1989), as *S. hammondii stagnalis*, which was elevated to species rank by Lemos-Espinal, Auth et al. (2001). This locality lies well within the known range of the species, although in a little-known region.

Lizards

Anolis nebulosus (Wiegmann). Nos. 13059, 13094-5, and one with no number, are from Chinipas, Chihuahua (27°23'39.9"N, 108°32'36.0"W), 469 m. Lieb (1981) recorded it from 2 mi SW Milpillas, and Tanner (1987) from Urique and 2 mi N Maguarichic. To judge from the record from Nacori Chico in Sonora (Lieb, 1981), the species probably occurs in Chihuahua to near 30° N.

Aspidoscelis burti stictogramma (Burger). No. 12563 is from nr Cumpas, Sonora (30°2'5.8"N, 109°47'0.4"W), 814 m. This is an adult (105 mm SVL) with no evidence of longitudinal stripes. The dorsum has prominent, rounded light spots more or less equal in diameter to the dark spaces between them. The sides are boldly barred, from axilla to groin, apparently produced by fusion of vertical rows of light spots. The throat is pale pinkish, with some tiny, scattered black flecks. The anterior edges of the ventrals are black. Except for the bars on the sides of the body, the pattern closely resembles the figure (pl. 40) in Stebbins (2003).

Aspidoscelis costata barrancarum (Zweifel). No. 11974 is from Río Mayo at the gates of Presa Mocuzari, Sonora (27°13'14.0"N, 109°5'52.8"W), 326 m; 12799, Yécora, Sonora (28°22'4.0"N, 108°55'32.7"W), 1545 m.; 12962, Tacupeto, Sonora (28°15'20.5"N, 109°18'1.9"W), 435 m; 12989-13024, 13049-52, 13067, 13086-9, 13096, 13102, Chínipas, Chihuahua (27°23'39.9"N, 108°32'36.0"W), 469 m.

Material from the Chínipas area has been reported previously by Lemos-Espinal, Walker and Smith (2003) and Walker et al. (2003a, b), but Presa Mocuzari is farther west than other localities for the subspecies, and narrows the gap between the ranges of that subspecies and *A. c. griseocephala* (Zweifel, 1959). The specimen from Yécora extends the known range of the subspecies northward about 120 km.

Aspidoscelis exsanguis (Lowe). Nos. 12302, 12307 are from Cañón del Oso, Sierra de San Luis, Chihuahua (31°16'17.7"N, 108°43'43.7"W), 1661 m; 12538-9, Puerto de San Luis, Sierra San Luis, Sonora (31°19'12.0"N,

108°45'42.0"W), 1417 m; 12563, Rancho Nogales, Chihuahua (31°10'32.6"N, 108°35'9.7"W), 1461 m. This species was found sympatric with *A. sonorae*.

Aspidoscelis marmorata variolosa (Cope). No. 12498 is from Charcos de Risa, Coahuila (26°12'32.7"N, 103°5'24.0"W), 1114 m. The throat is entirely black, and the chest and anterior part of the abdomen uniform black. The posterior part of the abdomen is spotted black. We recognize but two subspecies of *A. marmorata* (Lemos-Espinal, Chiszar and Smith, 1994).

Aspidoscelis sonorae (Lowe and Wright). All are from Chihuahua: 12274, 12278-9, 12281-2, Sierra de En Medio (31°9'37.5"N, 103°34'35.3"W), 1436 m; 12301, 12303-5, Cañón de Oso, Sierra de San Luis (31°16'17.7"N, 108°43'43.7"W), 1661 m; 12327, Rancho Nogales (31°10'32.6"N, 108°35'9.7"W), 1461 m. This species was found sympatric with *A. exsanguis* and *A. uniparens*.

Aspidoscelis tigris aethiops Cope. Nos. 12112-3 are from km 25, hwy 16, Sonora (28°52'28.5"N, 110°44'41.9"W), 339 m; 12847-59, 12865-9, 13155-97, 13214-13328, Ortiz, Valle de Guaymas, Sonora (28°17'23.0"N, 119°43'0.8"W), 103 m. The variation in this series will be reported elsewhere.

Aspidoscelis uniparens (Wright and Lowe). All are from Chihuahua: 12275-7, 12280, 12283, 12330, Sierra de En Medio (31°9'37.5"N, 103°34'35.3"W), 1436 m; 12797, pradera de Janos (31°9'51.1"N, 108°34'40.3"W), 1427 m. This species was found sympatric with *A. sonorae*.

Callisaurus draconoides brevipes Bogert and Dorson. Nos. 13130, 13201, 13377, are from Valle de Guaymas (28°17'23.0"N, 119°43'0.8"W), 103 m. Both are adults, smaller than those of *C. d. ventralis*; the male is 69 mm SVL, the female 71 mm. They are nearly uniform dark tan above. The lateral abdominal patches are very small and faint in the female, distinct but short in the male. A pink spot is anterior to the semeions, and the center of the throat is pink, in both specimens. These differ markedly from the specimens here referred to *C. d. ventralis*, a well-known, more northern subspecies, in the smaller, less colorful abdominal semeions, presence of pink on the sides of the abdomen and throat, and possibly size. There is some evidence that some DNA differences exist between what we here call *C. d. ventralis* and *C. d. brevipes* (D. Frost, pers. com.).

The name for the Guaymas specimens is problematical. Both Fugler and Dixon (1961) and Hardy and McDiarmid (1969) distinguished *C. d. brevipes* Bogert and Dorson (1942; see also Bogert and Oliver, 1945) of southeastern Sonora from the coastal *C. d. bogerti* Martín del Campo (1943) of Sinaloa and southwestern Sonora. However, there is no evidence that at least a 70% reliability of the supposed differences exist, and the localities of record for the two taxa in northern Sinaloa do not differ materially from the arid habitats in the vicinity of the localities for the types of *C. d. brevipes* (Alamos, Guirocoba). Likewise the pattern and coloration throughout these areas appear to be much the same. We therefore conclude that these populations should bear the prior name, *C. d. brevipes*.

Callisaurus draconoides ventralis (Hallowell). All are from Sonora: 11956-7, Sierra Seri nr Punta Chueca (28°53'20.6"N, 111°59'37.1"W), 75 m, April 22; 12134, Bahía Kino

(28°53'46.9"N, 112°1'58.5"W), 31 m, May 28; 12334, nr Bahía Kino (28°59'43.2"N, 112°7'43.3"W), 48 m, April 23.

The two from Bahía Kino are adult males, 87 and 75 mm SVL, densely white-speckled above. A large, dark blue wash covers much of the sides of the venter, and contains two diagonal dark bars. The throat is dark gray, and several dark bars are on the sides. There is no pink color.

The specimens from Sierra Seri are juveniles 53–55 mm SVL. The female has paravertebral rows of rounded black spots ~2 mm in diameter; the sides of the dorsum have a series of large dark spots, fused or partially so. Paired, weak dark bars are on each side of the abdomen; the sides of the throat are barred, and no pink is evident on the body. The male is speckled above, like those from Bahía Kino, the throat is gray posteriorly, and the abdominal semeions are about half as long as in the Bahía Kino specimens. There is no pink color, although the specimens were taken in the breeding season.

Coleonyx brevis Stejneger. All are from Coahuila: 12156-7, Charcos de Risa (26°12'31.5"N, 103°6'12.2"W), 1096 m; 12199, 49 km S Químicas del Rey (26°44'20.0"N, 103°12'44.7"W), 1163 m; 12213-38, 80 km S Químicas del Rey (26°26'36.0"N, 103°2'9.2"W), 1091 m; 12254-61, 120 km S Químicas del Rey (26°7'10.4"N, 103°7'46.0"W), 1088 m; 12315-8, 10 km S Químicas del Rey (26°57'46.2"N, 103°21'3.3"W), 1085 m; 12408-9, 12491-5, Sierra Texas, Cueva del Tabaco (25°33'54.0"N, 103°5'47.0"W), 1560 m.

Ordinarily this species is seldom encountered. On the contrary, on this occasion they were found abundantly on roads at night, feeding on huge numbers of flying ants.

Coleonyx variegatus sonoriensis Klauber. No. 12124 is from the hwy intersection of Calle Coyoacán, Sonora (28°58'32.8"N, 111°38'15.1"W), 43 m; 12336-7, Puerto Libertad, Sonora, 40 km S (29°19'46.9"N, 111°55'44.6"W), 172 m, and 94 km S (29°18'42.7"N, 111°53'34.4"W), 164 m.

Cophosaurus texanus scitulus (Peters). No. 12486 is from Balneario de Viesca, Coahuila (26°20'10.9"N, 102°48'0.0"W), 1112 m. This hatchling is but 26 mm SVL, captured July 14. The locality is well within the known range of the subspecies.

Crotaphytus antiquus Axtell and Webb. No. 12615 is from Sierra de San Lorenzo, Coahuila (25°43'39.7"N, 103°10'14.8"W), 1108 m. This locality is very near the northern end of the Sierra de San Lorenzo, and probably is at the northern end of the range of the species; other known localities are farther south in that Sierra, or in the intersecting Sierra Texas.

Crotaphytus collaris (Say). No. 12241 is from La Virgen, 25 km S Químicas del Rey, Coahuila (26°49'48.3"N, 103°16'50.2"W), 1211 m; 12242, 12500-2, 10 km S Químicas del Rey, Coahuila (26°57'46.2"N, 103°21'3.3"W), 1085 m; 12243, 9.5 km S Químicas del Rey, Coahuila (26°57'59.9"N, 103°21'26.0"W), 1087 m; 12244, 12503, Estación del Oro, Coahuila (27°14'11.3"N, 103°31'19.4"W), 1189 m; 12300, halfway between Sierra de En Medio and Rancho Nogales, Chihuahua (31°9'51.1"N, 108°34'40.3"W), 1427 m; 12312, 12504, Esmeralda, Coahuila (27°14'11.3"N, 103°31'19.4"W), 1189 m; 12513, km 166 rd to Químicas del Rey, Coahuila (27°12'38.0"N, 103°28'54.6"W), 1123 m; 12312, S La Esme-

ralda, Coahuila (27°13'10.5"N, 103°30'39.3"W), 1155 m; 12313, Rancho Peñoles, Chihuahua (27°7'49.6"N, 103°48'45.0"W), 1194 m; 12314, Sierra de En Medio, pradera de Janos, Chihuahua (31°9'51.1"N, 108°39'40.3"W), 1437 m.

All of these have relatively large white spots scattered over the dorsum. None of the females have the black lateral spots on the abdomen as reported by Lemos-Espinal, Smith and Chiszar (2002).

Crotaphytus dickersonae Schmidt. Nos. 12134, 12148-51, 12335, Bahia Kino, Sonora (28°53'46.9"N, 112°1'58.5"W), 31 m.

Ctenosaura macrolopha Smith. No. 13131, Ortiz, Valle de Guaymas, Sonora (28°17'23.9"N, 110°43'0.8"W), 103 m; 12865, Soyapa, nr Tecoripa, Sonora (28°46'18.25"N, 109°38'2.9"W), ~390 m.

Dipsosaurus dorsalis sonoriensis Allen. No. 12152, Bahia Kino, Sonora (28°53'46.9"N, 112°1'58.5"W), 31 m; 12805-34, Ortiz, Valle de Guaymas, Sonora (28°17'23.9"N, 110°43'0.8"W), 103 m.

Eumeces callicephalus Bocourt. No. 13068, Chinipas (Canelas), Chihuahua (27°23'39.9"N, 108°32'36.0"W), 469 m; 12606-7, 12955, Yécora, Sonora (28°22'4.0"N, 108°55'32.7"W), 1545 m. The species was previously reported from southwestern Chihuahua, near Batopilas, at 435 m, by Lemos-Espinal, Smith and Chiszar (2001). In one from Yécora the parietals narrowly fail to enclose the interparietal. No. 12955, 24 mm SVL, was taken on 25 July.

Gambelia wislizenii (Baird and Girard). No. 12240, km 164, rd to Sierra Mojada, Coahuila (27°12'38.0"N, 103°28'54.6"W), 1123 m.

Heloderma horridum exasperatum Bogert and Martín del Campo. Nos. 12601, 13076-8, 13121, are from nr Chinipas, Chihuahua (27°23'39.9"N, 108°32'9.7"W), 469 m.

Heloderma suspectum suspectum Cope. Nos. 13118-20, and 1 no no., are from Ortiz, km 25 hwy 16, Chihuahua-Hermosillo, Sonora (28°52'28.5"N, 110°44'41.9"W), 339 m.

Holbrookia approximans Baird. Nos. 12296-7, Cañón del Oso, Sierra de San Luis, Chihuahua (31°16'17.7"N, 108°43'7.0"W), 1661 m; 12316, Sierra de San Luis, Sonora (31°19'12.0"N, 108°45'42.0"W), 1417 m; nr Rancho Nogales, Sierra de San Luis, Chihuahua (31°10'32.6"N, 108°35'9.7"W), 1461 m; 12357, Sierra de San Lorenzo, Coahuila (25°43'39.7"N, 103°10'14.8"W), 1108 m.

The specimen from Coahuila is a large male (66 m SVL), with extensive blue patches surrounding the paired lateral black bars. Three of the 4 from Chihuahua and Sonora are adult females, 54–58 mm SVL; none have any pink on the throat (as does *H. elegans*), and the paired lateral dark bars are either poorly developed and gray (not jet black or absent, unlike *H. maculata*). The male (48 mm SVL) has sharply defined, jet black, paired bars on the sides of the abdomen; a small bluish area partially surrounds the black bars.

Holbrookia elegans thermophila Barbour. Nos. 12589-90, Yécora, Sonora (28°22'4.0"N, 108°55'32.7"W), 1545 m; 12835-7, 13123-9, 13198-13200, 13369-81, Ortiz, Valle de Guaymas, Sonora (28°17'23.9"N, 110°43'0.8"W), 103 m;

11953, nr Arroyo Chuchujaqui, Sonora (26°57'42.1"N, 108°53'10.6"W), 322 m; 11965, nr Guirocoba, Sonora (26°54'4.3"N, 108°49'51.3"W), 301 m; 11968-73, Río Mayo at gates of Presa Mocuzari, Sonora (27°13'14.9"N, 109°5'52.8"W), 326 m; 13063-5, 13010, 13101, Chínipas, Chihuahua (27°23'39.9"N, 108°32'36.0"W), 469 m.

The specimens from Yécora were taken at an exceptionally high altitude; both are 48 mm SVL, and the female has a pink spot in the center of the throat. All others are less than 58 mm SVL, lack the pink spot, and all others over that length (maximum 68 mm) have it. All males, the smallest 48 mm SVL, exhibit at least a little blue coloration about the paired lateral abdominal black bars.

It appears that a categorical difference exists between mature females of *H. elegans*, with a pink throat spot, and *H. approximans*, without it.

Phrynosoma cornutum (Harlan). Nos. 12158, 12273 are from Charcos de Risa, Coahuila (26°12'32.7"N, 103°6'24.0"W), 1114 m.

Phrynosoma modestum Girard. All localities in Coahuila: 12198, Químicas del Rey (27°1'13.2"N, 103°21'49.8"W), 1051 m; 12239, Zona del Silencio (26°38'44.5"N, 103°9'13.4"W), 1084 m; 12245, km 164, rd to Sierra Mojada (27°12'38.0"N, 103°28'54.6"W), 1123 m; 12262, 120 km S Químicas del Rey (26°7'10.4"N, 103°7'46.0"W), 1088 m; 12271, Charcos de Risa (26°12'31.5"N, 103°6'12.2"W), 1096 m; 12319-20, 10 km S Químicas del Rey (26°57'46.2"N, 103°21'3.3"W), 1085 m; 12356, Cueva del Tabaco, Sierra Texas (25°33'54.0"N, 103°5'47.0"W), 1133 m; 12965-8, 60 km S Químicas del Rey (26°35'53.2"N, 103°6'50.0"W), 1082 m.

Phrynosoma solare Gray. All are from Sonora: 12126, 56 km S Puerto Libertad (29°30'6.0"N, 112°11'41.7"W), 172 m; 12127, 78.2 km S Puerto Libertad (29°21'39.4"N, 111°59'12.4"W), 172 m; 12969-71, 13107-16, Ortiz, Valle de Guaymas (28°17'23.9"N, 110°43'0.8"W), 103 m. One laid 10 eggs, 12.5 × 8 mm, on 9 August.

Sceloporus albiventris Smith. Nos. 13032-3, 13053 are from Chínipas, Chihuahua (27°23'39.9"N, 108°32'36.0"W), 469 m; 13043, Gorogachi, Chihuahua (27°16'21.1"N, 108°32'7.2"W), 700 m.

Sceloporus clarkii clarkii Baird and Girard. Nos. 12292-3, Sierra de En Medio, pradera de Janos, Chihuahua (31°9'37.5"N, 103°34'35.3"W), 1436 m; 12322-3, Rancho Nogales, pradera de Janos, Chihuahua (31°10'32.6"N, 108°35'9.7"W), 1461 m; 13060-2, Chínipas (Canelas), Chihuahua (27°23'39.9"N, 108°32'9.7"W), 469 m; 12613, Nuri, Sonora (28°6'26.6"N, 109°19'28.1"W), 363 m; 12800-1, Yécora, Sonora (28°22'4.0"N, 108°55'32.6"W), 1545 m.

Sceloporus cyanostictus Axtell and Axtell. Nos. 12354-5, 12358, 12487, are from nr Cueva del Tabaco, Sierra Texas, Coahuila (25°33'54.0"N, 105°5'47.0"W), 1133 m. The adult male is bright green on the dorsum posterior to the collar, including the base of the tail. The collar is complete ventrally and dorsally, covers 2 scale rows, has a complete light green posterior border and a series of spots of similar color on the anterior border. The sides of the abdomen are green, but a broad central area from the complete black collar into the groin

is black. The throat is weakly suffused with gray laterally.

In the 3 juveniles (47–50 mm SVL), the collar covers 2–3 scale lengths and is not interrupted middorsally. The postocular and supralabial light stripes are dim or absent, and there are 6 very irregular transverse rows of separate green scales on the body posterior to the collar. This pattern gives a rather densely speckled appearance to the dorsum.

This species was reported from the same locality by Lemos-Espinal, Chiszar and Smith (2002). Only two others are known.

Sceloporus jarrovii Cope. Nos. 12540-3 are from Puerto San Luis, Sierra San Luis, Sonora (31°19'12.0"N, 108°45'42.0"W), 1417 m; 12583-5, Yécora, Sonora (28°22'4.0"N, 108°55'32.6"W), 1545 m. The latter are from the western edge of the range of the species in Sonora. They include five juveniles (36–40 mm SVL) that differ consistently from the others in having the collar interrupted middorsally, prominent postocular and supralabial light stripes, little speckling on the dorsum, and in having the tail dimly banded.

Sceloporus lemosespinali Lara-Góngora. Nos. 12586-7 are from Yécora, Sonora (28°22'4.0"N, 108°55'32.7"W), 1545 m. The locality is at the western edge of the range of the species.

Sceloporus merriami sanojae Lemos-Espinal. Nos. 12196-7 are from the S end of Sierra Mojada, Coahuila (27°15'28.1"N, 103°35'22.2"W), 1053 m; 12328, 12608, Estación del Oro, Coahuila (27°14'11.3"N, 103°31'19.4"W), 1189 m; 12306, 12609, Ranch Peñoles, Chihuahua (27°7'49.0"N, 103°48'45.0"W), 1194 m.

These agree with the original description of specimens from the same localities, which are the only two known for the subspecies. Granules are present between the dorsal scales at least posteriorly. No. 12306 is especially noteworthy in having what appears to be a complete gular fold; the scales in a transverse row in front of it are distinctly larger than those following it, although there is no free or granular skin between them. The line of contact of these two rows coincides with the short extension ventrally of the nuchal granules in front of the arm, in the same position as in *Urosaurus* and *Uta*.

In the latter two genera the granules usually extend completely across the throat, but not always. For example, among the 41 specimens of *Urosaurus ornatus lateralis* reported here, 9 (11937, 11930-1, 11943, 11963, 11976, 11978, 11984, 12147) have a complete interruption medially, 3–4 scales wide, with absolutely no granules, and the scales uniform in size both anterior and posterior to the interruption.

The specimens of *Uta* reported herein usually have several rows of granules in the gular fold, although in one the fold is interrupted medially by a row of small, imbricate scales.

These features and variations suggest a perhaps even closer relationship of *S. merriami* and *Urosaurus* than was concluded by both Wiens and Reeder (1997) and Flores-Villela et al. (2000). Both works singled out the *variabilis*, *utiformis*/*siniferus* and *merriami* groups as substantially isolated phylogenetically from other groups of *Sceloporus*. Wiens (1993a: p. 293, 1993b) gave more weight to the distinction of *S. merriami* from the rest of *Sceloporus*, and the variation here noted suggests a close relationship of *Urosaurus* and *S. merriami*. There is some merit in consideration of the latter as a distinct

subgenus; it may even be polytypic (Smith et al., 2003). However, at least 3 other subgenera would have to be recognized, for which there is no practical need.

Sceloporus nelsoni barrancarum Tanner and Robison. All are from Chihuahua: 13035, Arroyo Las Borregas (27°23'4.3"N, 108°32'21.1"W), 470 m; 13042, Gorogachi (27°16'21.1"N, 108°32'7.2"W), 700 m; 13066, 13098-100, 1 no no., Chínipas (27°23'39.9"N, 108°32'36.0"W), 469 m.

Sceloporus poinsettii polylepis Smith and Chrapliwy. No. 12496 is from Cueva del Tabaco, Sierra Texas, Coahuila (25°33'54.0"N, 103°5'47.0"W), 1133 m. Specimen has 37 dorsals and is a juvenile that does not show the adult pattern.

Sceloporus undulatus consobrinus Baird and Girard. Nos. 12553-4, 12604-5, 12796 are from Sierra de En Medio, Rancho Nogales (31°10'32.6"N, 108°35'9.7"W), 1461 m.

The females (51, 66, 68 mm SVL) have sharply defined dorsolateral and lateral light stripes. A paravertebral row of 7 dark spots, each flanked by a light spot, extends from axilla to groin. The ventral surfaces have no evidence of semeions, except in the smallest a pair of small, light blue spots on the posterior part of the throat.

The two males, one an adult (61 mm SVL), have a dorsal pattern much like the females, but less distinct and less sharply defined. The paired blue gular patches have black borders narrowly in contact medially by 1–3 scale lengths. The abdominal semeions are widely separated by a minimum of 5 scale widths.

This subspecies has been reported before from the same locality by Lemos-Espinal, Chiszar and Smith (2004). *S. edbelli* was reported in the same work from a locality about 15 km southeast, in a semiarid flat basin, whereas the present specimens were taken in a distinctly different mountain habitat.

Sceloporus virgatus Smith. Nos. 12514-37, 12544-50, 12798, Puerto de San Luis, Sierra San Luis, Sonora (31°19'12.0"N, 108°45'42.0"W), 1417 m; 12564, 12569-82, 12602-3, Yécora, Sonora (28°22'4.0"N, 108°55'32.7"W), 1545 m. The latter is the southernmost locality recorded for the species in Sonora.

Uma exsul Schmidt and Bogert. Nos. 12359-99, 12417-85, Dunas de Bilbao, mpio Viesca, Coahuila (25°25'26.7"N, 102°53'40.2"W), 1115 m, 13–14 July. All are juveniles, about 40 mm or less SVL, except for two adults.

Urosaurus ornatus lateralis (Boulenger). All are from Sonora: 12937-52, nr Arroyo El Chuchujaqui (26°57'42.1"N, 108°53'10.6"W), 322 m; 11954-5, 11963, Arroyo El Chuchujaqui (26°56'25.9"N, 108°53'10.6"W), 266 m; 11966, nr Laborcita (26°53'56.1"N, 108°46'39.1"W), 332 m; 11975-95,

12147, Río Mayo at the gates of Presa Mocuzari (27°13'25.6"N, 109°6'30.6"W), 90 m.

This subspecies is readily distinguished from *U. o. schottii* (and all other subspecies of *Urosaurus ornatus* in Chihuahua) by its essentially single row of enlarged paravertebrals on each side (vs 2). In this respect it resembles *U. bicarinatus*, to which it is not particularly closely related (Wiens, 1993b).

Urosaurus ornatus schottii Baird and Girard. Nos. 11959-60, 12114-20 are from km 25, hwy 16, Sonora (28°52'28.5"N, 110°44'41.9"W), 339 m; 12106, Rio Escondido, Sonora (28°55'47.9"N, 111°35'41.9"W), 57 m; 12111, San José de Pima, Sonora (28°43'11.2"N, 110°20'57.2"W), 49 m; 12284-91, Sierra de En Medio, Chihuahua (31°9'37.5"N, 103°34'35.3"W), 1436 m; 12324-5, Sierra de San Luis, Sonora (31°19'12.0"N, 108°45'42.0"W), 1417 m; 12588, Yécora, Sonora (28°22'4.0"N, 108°55'32.7"W), 1545 m; 12309-10, 12838-46, 13132-54, 13202-13, 13329-68, Ortiz, Valle de Guaymas (28°17'23.9"N, 110°43'0.8"W), 103 m.

This subspecies is remarkably distinct from *U. o. lateralis* of southeastern Sonora in having two rows of enlarged paravertebral scales on each side. One adult male from northwestern Chihuahua exhibits blue spots on the scales of the top and sides of the head, and on the base of the tail. No others from that area have such markings, which suggest some influence of the adjacent, much bluer *U. o. caeruleus*.

Uta stansburiana elegans Yarrow. Nos. 12100-5 are from Estero Tastiota, Sonora (28°21'55.6"N, 111°27'32.2"W), 14 m; 12107, nr Bahía Kino (28°55'47.9"N, 111°35'41.9"W), 57 m.

These do not represent *U. s. taylori*; although the males lack evidence of dorsolateral light lines, they are present although dim in females, one from each locality, and are bright in a hatchling 20 mm SVL.

Uta stansburiana stejnegeri Schmidt. No. 12272 is from Charcos de Risa, Coahuila (26°12'31.4"N, 103°6'12.2"W), 1096 m; 12306, 12308, Cañón del Oso, Sierra de San Luis, Chihuahua (31°16'17.7"N, 108°43'7.0"W), 1661 m; 12346-53, Cueva del Tabaco, Sierra Texas, Coahuila (25°33'54.0"N, 103°5'47.0"W), 1133 m; 12400, Dunas de Bilbao, Coahuila (25°25'26.7"N, 102°53'40.2"W), 1115 m; 12497 Cerro Tetas de Juana (26°4'17.8"N, 103°9'0.1"W), 1096 m. All localities are within the known range of the subspecies.

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Observations on Ectoparasitism by *Eutrombicula alfreddugesi* (Acari: Trombiculidae) in a Population of *Sceloporus cyanogenys*

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Abstract

We observed degrees of infestation by the mite *Eutrombicula alfreddugesi* on the blue spiny lizard, *Sceloporus cyanogenys*, in a population from Nuevo Leon, Mexico. We considered sex, snout-vent length, weight and number of mites in three corporal regions of 16 lizards. All of the lizards had some degree of infestation; however 87.5% of males and 75% of females showed a high infestation (> 15 mites). For males the mean number of mites was 142.5 ± 55.5 , while for females it was 121.37 ± 57.4 . Mites were found exclusively in the neck pockets of both sexes. Apparently the physical condition of *S. cyanogenys* is not affected by this ectoparasitism.

Key words: *Eutrombicula alfreddugesi*, *Sceloporus cyanogenys*, ectoparasitism, neck pockets.

Introduction

In recent years, knowledge about parasitism in reptiles has grown, and interest has grown as well because the consequences may be of great importance (Barnard and Behnke, 1990). One lizard species in which chigger mites have been observed is the blue spiny lizard, *Sceloporus cyanogenys* (Cope, 1885). There is little information about the biology and ecology of this lizard (Hunsaker, 1959; Kennedy, 1960; Greenberg, 1977) and until now the identity of the parasitic mite species was not known.

Eutrombicula alfreddugesi (Oudemans, 1910) is a red mite; it is the species most frequently implicated in cases of human infestation in the United States (Jenkins, 1948; Potts, 2001). The larva of this mite causes an itch and inflammation common in children. This parasite has been studied in other lizard populations: some lizard species known to be affected are *Sceloporus grammicus microlepidotus*, *S. palaciosi* (Gadsden, 1988), *S. couchii* (García-de la Peña et al., 2004) and *S. undulatus* (McAllister, 1980; Klukowski, 2004).

To date, there has been no information about ectoparasitism of *S. cyanogenys* by *E. alfreddugesi*. Therefore, we attempted to determine the degree of infestation by sex and body distribution of this parasite and its relationship with the microhabitat in a lizard population of Nuevo León, México.

Methodology

In October 2003, while studying the herpetofauna of Parque Ecológico Chipinque in the municipalities of Garza García and Monterrey, Nuevo León ($25^{\circ}34'50''\text{N}$, $100^{\circ}21'55''\text{W}$; elev. 1365 m), we captured 16 adult *Sceloporus cyanogenys* with a noose or by hand. The vegetation type in this park is pine-oak forest: species like *Pinus teocote*, *P. pseudostrobus*, *Quercus rysophylla* and *Q. polymorpha* are the most abundant. Data obtained for each lizard were sex (hemipenial eversion used to

identify males), snout-vent length (SVL, to nearest mm), weight (W, with a 30-g PesolaTM spring scale) and the total number of chigger mites carried (T_m). To obtain the latter, we carefully examined lizards, but especially the neck pockets, axillae and postfemoral pleats. The mites were removed at the place of capture using wetted cotton swabs. The red color of the mites allowed counting them on the surface of the cotton with a magnifying glass and collecting them. Lizards were released at the place of capture. We used the criteria of Tal-leklint-Eisen and Eisen (1999) to categorize infestation intensity: low (1 to 6 mites per individual), moderate (7 to 15), or high (> 15). A Kolmogorov-Smirnov goodness of fit test revealed SVL, W and T_m to be normally distributed, so we used *t*-tests to compare means of SVL, W and T_m between males and females. We also carried out regression analyses of SVL vs T_m , and W vs T_m for both sexes. For all tests the significance level was 0.05; measurements are reported as mean $\pm$ SE.

Results

We captured 16 *S. cyanogenys* (8 males and 8 females), all of which carried chigger mites. There were no significant differences between mean SVL and W of males (66.0 ± 9.7 mm, 17.0 ± 7.8 g) and females (63.2 ± 4.7 mm, 11.5 ± 2.5 g), $t = 0.19$, d.f. = 14; $t = 0.46$, d.f. = 14, respectively.

Of the 8 males, 12.5% ($n = 1$) showed a low infestation, but in the remainder (87.5%; $n = 7$), infestation was high. Of the 8 females, 12.5% ($n = 1$) had a low infestation, 12.5% ($n = 1$) showed a moderate level of mites and 75% ($n = 6$) had heavy infestations. Mean T_m values for males (142.5 ± 55.5 ; range: 5–500) and females (121.37 ± 57.4 ; range: 5–500) did not differ significantly ($t = 0.26$, d.f. = 14). We found no relationship between SVL and T_m for males ($r^2 = 0.26$; $F_{1,6} = 2.82$; $n = 8$) or females ($r^2 = 0.24$, $F_{1,6} = 1.93$; $n = 8$); nor between W and T_m for each sex (males: $r^2 = 0.29$, $F_{1,6} = 2.51$; $n = 8$; females: $r^2 = 0.49$, $F_{1,6} = 5.77$; $n = 8$). SVL

and W of the hosts were significantly related in both sexes (males: $r^2 = 0.94$, $F_{1,6} = 94.01$; $n = 8$; females: $r^2 = 0.87$, $F_{1,6} = 40.73$; $n = 8$). Mites were found exclusively in the neck pockets of males and females.

Six of the males (75%) and eight females (100%) were found on vertical limestone surfaces; the remaining 25% of males were captured on fallen *Pinus teocote* logs.

Discussion

Dunlap and Mathies (1993) and Schall et al. (2000) conclude that the presence of large quantities of *Ixodes pacificus* in *S. occidentalis* (over 78 parasites per lizard) can promote negative consequences for the host, such as a reduction in the density of red blood cells. In the present work no significant relationship between the SVL, weight and total number of mites in male or female lizards was found; hence we can conclude that infestation by these parasites does not reduce the physical condition of *S. cyanogenys*. However, the mean number of mites was greater than 100 parasites in both sexes, which means a high infestation degree; though the sample size

in this work may not be able to establish if the physical condition of this lizard is affected or not by this parasite.

On the other hand, all of the parasites we found were located in the neck pockets of both male and female lizards. Salvador et al. (1999) proved the preference of *Ixodes ricinus* to the neck pockets of *Psammodromus algirus*. Their hypothesis was that lizard mites may prefer these pockets when there is available space in them. At the same time, this selection of specific areas may result in a benefit for the host in preventing the presence of parasites in other functionally important areas such as the eardrums and axillae. The obtained results in this study of *S. cyanogenys* agree with the latter hypothesis, however, it is yet necessary to make more studies about the biology and ecology of this lizard and the degree of ectoparasitism in other populations of this species.

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Notes on Geckos of the Genus *Siwaligekko* Khan, 2003 (Reptilia: Gekkonidae) in Pakistan

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Abstract

Short notes on morphology, ecology and distribution, and a key for identification of the Pakistani species of the sub-Himalayan genus *Siwaligekko* are provided.

Introduction

The main topographical feature of northern Pakistan is the western wing of the Himalayas, comprising three ranges: the Great Himalayas, elevation more than 4600 m; the Lesser Himalayas, 1800–4600 m, and the sub-Himalayas or the Siwalik, 600–1200 m (Khan, 1980b). In Pakistan the genus *Altigekko* Khan, 2003, is widely distributed in the Greater and Lesser Himalayas (Khan, 2004), while the recently described peculiar geckos of genus *Siwaligekko* Khan, 2003, are confined to the hills of the Siwalik.

The geckos of the genus *Siwaligekko* comprise several upland species distributed in the sub-Himalayas from Pakistan through India to Nepal, and in peninsular India in the south. The three Pakistani species recently described are: *Siwaligekko mintoni* (Golubev and Szczerbak, 1981) from Swat, North Western Frontier Province (NWFP), *S. dattanensis* (Khan, 1980) Datta, Hazara, NWFP, and *S. battalensis* (Khan 1993), Batgram, Hazara, NWFP. The list of extralimital *Siwaligekko* species is long, including: *Siwaligekko fasciolatus* (Blyth, 1860) from Simla, India; *S. lawderanus* (Stoliczka, 1871) Almora, Kumaon, Calcutta, India; *S. tibetanus* (Boulenger, 1905) Chaksam Ferry, Tsangpo Valley, Tibet, China; *S.*

himalayanus (Duda and Sahi, 1978) Kashmir; *S. markus-combaili* (Darevsky et al., 1997) Nepal; *S. martinistollii* (Darevsky et al., 1997) Nepal; *S. nepalensis* (Schleich and Kästle, 1998) Nepal; *S. nebulosus* (Beddome, 1870), Golconda Hills; Gorge Hills, Godavery, Madras; *S. collegalensis* (Beddome, 1870), Southern Indian Hills and Sri Lanka; *S. deccanensis* (Günther, 1864), Northern Western Ghats, southern India; , *S. albofasciatus* (Boulenger, 1885), South Kanara District, western Ghats, southern India, *S. jeyporensis* (Beddome, 1877), Patinghe Hill, Jeypore, Madras, Southern India and *S. triedrus* (Günther, 1864) from mountainous Sri Lanka.

General characteristics of Pakistani geckos of the genus *Siwaligekko*

The Pakistani *Siwaligekko* are medium-sized geckos (snout-vent length 38–72 mm), with body and tail cylindrical and plump. The tail is shorter than or subequal to the body (35–72 mm), tapers evenly, is not whiplike, and is indistinctly segmented. Tail segmentation is indicated by 2–3 dorsolateral rows of minute, blunt tubercles on the anterior half. The tail is fragile at its base; the regenerated tail is not swollen; subcaudals are indistinct, in several rows. No supraciliary spines are present on the posterior half of the upper eyelids; dorsal granular scales round to polygonal, juxtaposed, beadlike (convex), interspersed with three to four times larger similar smooth or slightly keeled tubercles, extending to the neck and head, but absent from limbs. Postfemoral tubercles absent; interorbital scales 21–35; midabdominals 36–56; midventrals 149–205; subdigital lamellae under basal part of the digits somewhat broader than those under angular part; subdigital lamellae under 4th toe 14–21; male with 8–10 preanal pores, no femoral pores; both types of pores absent in female.

Color: Dorsum colored from amber, shading to yellow (*mintoni*), darkish gray (*dattanensis*) or light brown (*battalensis*), with a pattern of sooty black to light brown crossbars, spots, blotches or reticulations; tail barred, tail pattern extends to ventral side.

Natural history

Siwaligekko are characteristic of the Himalayan and south Indian moist Alpine Zone. In the Himalayas the zone is typified by permanent grass cover and scattered juniper trees, with scattered tumbled boulders. The area is overgrazed and modified due to intense human intervention. It is spread throughout higher slopes of the Kaghan valley, Azad Kashmir, Swat, Dir



Figure 1. *Siwaligekko dattanensis* (Khan, 1980)

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Figure 2. Distribution of Pakistani species of the genus *Siwaligekko*: 1-2 = *S. mintoni*; 3 = *S. battalensis*; 4-5 = *S. dattanensis*; 6-8 = extralimital species from Kashmir.

and Indus Kohistan. The vegetation is heterogeneous, consisting of *Betula*, *Juniperus* and *Salix* trees, with *Poa* and *Iris* grasses (Khan, 1999).

Geckos other than *Siwaligekko* reported from the sub-Himalayas are *Eublepharis macularius*, *Cyrtopodion scaber* and *Mediodactylus walli* (Khan, 1999). The *Siwaligekko* are gregarious, living in groups, retreating in a common crevice or hole in a rock, under loose stones, or a slab close to vegetation. They readily invade inhabited buildings, where they stay in holes and crevices among brick and stone walls. Their movements are slow and deliberate. The geckos come out of their retreats just after sunset, radiating out in the surrounding vegetation to forage for insects and insect larvae, retreating back before dawn. Dipterous insects are a predominant part of their diet; however insect larvae and worms constitute a considerable part of their stomach contents.

In the Himalayas breeding season extends from April to early June; juveniles are seen active by early May. A clutch consists of 1–2 oval eggs with white calcareous shells, deposited between rocks or in crevices in the brick walls of buildings; usually eggs are laid in communal sites. When caught, the geckos typically give a low squeak, turn and threaten to bite, often voiding excrement in the effort (Khan 1980a; 1993).

Because of their slow movements these geckos have many predators. Among their reptilian predators are agamid lizards of the genus *Laudakia* (*himalayana*, *nuristanica*, *tuberculata*), Bengal monitors, *Varanus bengalensis*, cliff racers, *Platycephalus rhodorachis*, and Central Asian cobras, *Naja oxiana*. Local people kill the gecko, considering it venomous.

Distribution

The *Siwaligekko* species in the Pakistani part of the sub-Himalayas, are low altitude submontane geckos, ranging between 34–36°N, 74–76°E, at 600–1200 m of elevation. The Siwalik Hills run from Rawalpindi through Abbottabad, and Manshera Districts in alpine eastern NWFP, Pakistan, extend-

ing eastward into Kashmir, Nepal, Sikkim and Assam (Khan, 2003). The south peninsular Indian species range from plains to 2000 m along the eastern and western Ghats, between 15–15°30'N, 74–80°E (Smith, 1935).

Key to the species of genus *Siwaligekko* in Pakistan

1. Three nasal scales; dorsal pattern of transverse bands that are much narrower than the interspaces, tending to break into spots on sides----- *Siwaligekko mintoni*

Two nasal scales; dorsal pattern of transverse bands; bands as broad as interspaces at least in subadults, may become narrower in adult and form a reticulum----- 2
2. Dorsal bands broader than the interspaces; midventrals 149 to 187-----*Siwaligekko dattanensis*

Dorsal bands breaking into a reticulum; midventrals 194 to 205----- *Siwaligekko battalensis*

Siwaligekko battalensis (Khan, 1993)

Reticulate plump-bodied gecko

Distribution: Known only from its type locality, Batgram, District Manshera, NWFP, Pakistan, 34°40'N, 73°03'E.

Siwaligekko dattanensis (Khan, 1980)

Banded plump-bodied gecko

Distribution: Widely distributed in alpine Punjab and eastern Northwestern Frontier Province, Pakistan, 33–34°N, 73–74°E.

Siwaligekko mintoni (Golubev and Szczerbak, 1981)

Swati plump-bodied gecko

Distribution: Known from Udigram, Swat, NWFP, Pakistan, 33–34°N, 72°21'E.

Minton (1966) collected this species and tentatively identified it as *Gymnodactylus stoliczkae*. However, later Golubev and Szczerbak (1981) described it as a new species, *Gymnodactylus mintoni*.

Concluding remarks

Siwaligekko are morphologically closer to the ancestral cyrtodactylid geckos than any of the other angular-toed geckos of the circum-Himalayan region, a fact already noted by Szczerbak and Golubev (1984:55). The *nomen nudum* genus *Gonydactylus* Kuhl and Van Hasselt 1822, has repeatedly been

synonomized with the genus *Cyrtodactylus* (Kluge, 1985; Das, 1996; Darevsky et al., 1997; Schleich and Kästle, 1998; Rösler, 2000), moving *Cyrtodactylus* species to and fro (Kluge, 1993, 2001; Schleich and Kästle, 2002). The recently described Nepalese geckos (*S. markuscombaii*, *S. martinistollii* and *S. nepalensis*) are remarkably similar in morphology to the west Himalayan *Siwaligekko battalensis* (Khan, 1993).

Table 1. Scale counts and measurements (in mm) for Pakistani species of genus *Swaligekko* (Data for *S. mintoni* from Golubev and Szczerbak, 1981; for *S. dattanensis* from Khan, 1980 and for *S. battalensis* from Khan, 1993).

Character	<i>Siwaligekko mintoni</i> (N = 1)	<i>Siwaligekko dattanensis</i> (N = 10)	<i>Siwaligekko battalensis</i> (N = 7)
Snout–vent length	38.4	52–62	38–72
Tail length	45	33–57	35–72
Supralabials	11	9–10	9–11
Infralabials	8/9	7–9	8–10
Interorbitals	30	21–35	25–32
Number of midabdominal scales	36	47–56	50–54
Number of midventrals	150	149–187	198–205
Subdigital lamellae-4th toe	17	14–16	18–21
Preanal pores	0	9–10	8–10
Dorsal pattern	Banded; bands are much narrower than interspaces and tend to break into spots on sides	Banded; bands are as broad as interspaces and have irregular margins	Reticulum; young have bands as broad as interspaces, which become narrower and reticulate in adults

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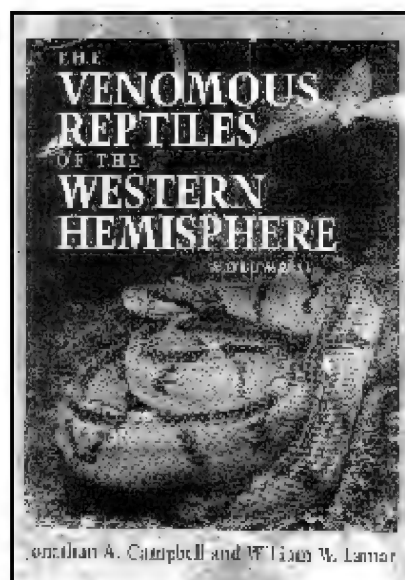
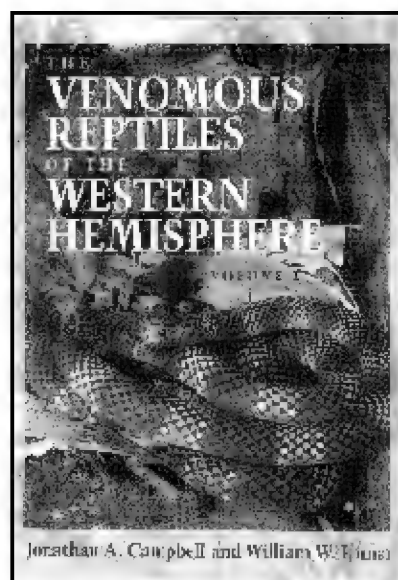
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Book Review: *The Venomous Reptiles of the Western Hemisphere* by Jonathan A. Campbell and William W. Lamar. 2004. Cornell University Press, Ithaca, New York.

Vol. 1, xviii + 1-475 + 28 pp.; Vol. 2, xiv + 477-870 + 22 pp. ISBN 0-8014-41-41-2. \$149.95*

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Having been fans of the predecessor volume by these authors, *The Venomous Reptiles of Latin America* (1989), we looked forward to the new, expanded treatment embracing the toxicophidofaunas of the United States and Canada in addition to those of Latin America. Venturing above 30°N latitude adds an impressive land area to the scope of the book (19,414,023 km²), but only a measly six species of venomous snakes are added to the picture. To be sure, the list of venomous reptiles for the United States and Canada contains 23 species, but the majority of these also occur in at least one Latin American nation; only six do not. Hence, expanding the scope of the

1989 book to include the entire Western Hemisphere brings herpetological closure without greatly taxing the authors' or the readers' cognitive faculties.

In other words, the real contribution of the new work is less a matter of its expanded geographic coverage than a matter of its revision and updating of the Latin American material. This is the reason for purchasing *The Venomous Reptiles of the Western Hemisphere*, and the volumes succeed admirably in integrating the last 15 years worth of research into the fabric of the 1989 book.

To look more deeply into this assertion, consider that the 1989 work contained 27 double-column pages of references, which numbered approximately 1,470 citations. The new volumes contain 96 double-column pages of references, numbering just over 4,700, or about 3.2 times the number of references contained in the earlier book. Two factors account for this increase in the size of the Literature Cited. First is the continuing explosion in scientific knowledge, which appears to accelerate with each passing decade. Numerous classical books and papers are cited, going well back into the nineteenth century and even earlier (e.g., Lacépède, 1788-1789), but the authors have also been extremely thorough in dealing with recent literature. We sampled ten pages of references and counted the

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number of citations from 1989 to the present, relative to the total number of citations on each page. The mean percentage was 33.4%, telling us that about one-third of all references are from the most recent 15 years. The second factor is that Campbell and Lamar have expanded their treatments of most topics. For example, families and genera are introduced with lengthy discussions of variation, ecology, behavior, conservation, venom, diets, predators, parasites and reproduction. Virtually all herpetologists will find these sections to be valuable, and in all cases the sections are far more complete than their counterparts in the 1989 book. Another addition to the new work is that each species is introduced with a synonymy; generic synonymies are also presented. Wonderful quotations enhance the volumes, sometimes by providing historical information and sometimes by providing local color. Care has been taken in the selection of the quotations; we found none to be without merit. Species accounts are more thorough than was the case in the 1989 book, especially with new information about variation.

The upshot is that the present work is much larger in scope than was the earlier book, and we can take a collective pride in the accretion of knowledge that is packed into these two volumes. Of course, there is much more to learn about most of the venomous reptiles in the Western Hemisphere, and Campbell and Lamar have done the discipline a great service by bringing together virtually everything that is known and by pointing to areas in need of additional cultivation. These volumes will serve as a new foundation for research on most aspects of venomous reptiles of the Western Hemisphere for many years to come.

In any project of this vast scope there are bound to be errors and shortcomings. A recent review by McCranie (2004) has done a meticulous job of identifying these, to which we have nothing to add. Savage (2004) also found a few troublesome points, one of which was that a paper cited multiple times by Campbell and Lamar (Greene and McDiarmid, 2004) was not in the Literature Cited. It *is* present in our copy. Indeed, the only slightly irritating feature we found was that Campbell and Lamar were not consistent in presenting Spanish-language keys for all Latin American nations.

The changes at the species-name level in these volumes, compared with the names used in the 1989 volume are surprisingly numerous. Most are strictly combinational, specific names being shifted from one genus to another, but numerous

other names have been added, and some dropped. No specific name for any taxon has been changed, so far as we are aware.

All changes concern Latin America. The nomenclature in *Heloderma* is unaltered from the 1989 edition, but almost all venomous snake genera have at least a few changes.

In 1989, only two genera of coral snakes were recognized; in the recent work *Leptomicrurus* was adopted for four species previously placed in *Micrurus*. This arrangement conforms with the original proposal (Schmidt, 1937), revived by Roze (1996). No changes of species names were introduced for *Micruroides*, but there are 16 for *Micrurus* and one for *Leptomicrurus*.

Lachesis as treated in 2004 has four species, as opposed to one in 1989.

Three genera of rattlesnakes appeared in 2004 that were not present in 1989: *Atropoides*, *Bothrocophias* and *Cerrophidion*, each with several species. Some species were new since 1989, others were shifted from other genera. Among the remaining six genera, there was one change in *Agkistrodon* (not counting the inclusion of one species from the United States), two changes in *Bothriechis*, five in *Bothriopsis*, 16 in *Bothrops*, one in *Ophryacus* and 11 in *Porthidium*.

In *Crotalus*, five changes, other than the inclusion of three species of the United States, were adopted in 2004. Those changes included shift to *Crotalus* of *Sistrurus ravus*, thus leaving the latter genus with but two species. This change is representative of all the others in being well justified by recent scientific findings. Thus, no matter how difficult it will be for us to say *Crotalus ravus*, the taxon's present allocation is predicated upon firm evidence.

We congratulate Campbell and Lamar as well as the other authors who contributed fine specialty chapters: E. D. Brodie, III, and E. D. Brodie, Jr. ("Venomous Snake Mimicry"), R. L. Gutberlet, Jr., and M. B. Harvey ("The Evolution of New World Venomous Snakes"), R. Norris ("Venom Poisoning by North American Reptiles") and D. A. Warrell ("Snakebites in Central and South America: Epidemiology, Clinical Features, and Clinical Management"). All parts of these volumes will play a central role in herpetology for a long time. Consequently, we agree completely with the last two words of Savage's (2004) review: "c'est magnifique!", although we prefer *es magnifico*.

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HerPET-POURRI

by Ellin Beltz

A visit to San Diego

Some of my readers have written me asking me to tell you more about what I do and where I go and as I have actually just gone somewhere and done something, this is a good time to write about myself.

Several years ago, my husband and I moved out of Chicago to far northern California—the part with the redwoods and beautiful coastlines that's five-and-a-half hours from anywhere. This is usually a good thing, until you have to go somewhere like we did last week when we left the cool dry north coast for the damp, stormy and landsliding roads of southern California. In a marathon 14-hour drive, we arrived in Escondido after spending what seemed an eternity in California's over-irrigated and chemically saturated Napa region and Central Valley. The loss of water in the aqueducts to evaporation is said to equal all the water used by the normally thirsty southern cities. I wouldn't know. It was raining so hard that I had to keep my eyes and brain on the road at all times while giant lightning flashes struck down on all sides. Southern California has received a year's worth of rainfall already in 2005, and it's only February.

We visited the San Diego Zoo where we were given an absolutely royal tour by Animal Care Manager John Kinkaid who showed us just about every individual animal in the collection. We started by threading in and out of wheeled cages each with its own Fiji banded iguana. Then into one corner of the building where we added highly endangered Panamanian golden frogs, *Atelopus zeteki*, to our life lists. We saw the algae-eating tadpoles and the newly metamorphosed hatchlings of which the zoo is so rightly proud. In its home range, seeing a golden frog is considered the greatest good fortune, so seeing these augured great things to come.

Entering a very cold room, we saw a first of order for Ken and a new species for me, the Brothers Island tuatara, *Sphenodon guntheri*. This tuatara has an olive skin with yellow spots and feels soft, not at all lizard-like even though its spine is tipped with spiky looking protuberances.

Slightly warmer was the hibernation room for their heloderms, both the common Gila monster, *Heloderma suspectum*, and the Guatemalan version, *Heloderma horridum charlesbogerti*, which is darker and has larger scales than the pink and black more northerly species. Years ago, when I was corresponding with Charles Bogert on his autobiography I asked him how it felt to have a heloderma named after him (the subtext of course being how does it feel to have such an ugly and foul-tempered animal named for you). He replied promptly that it was a great honor and added, "Primitive lizards for primitive people!"

Our zoo tour continued with several tanks of star and radiated tortoises, a flat-backed tortoise, *Pyxis planicauda*, and some parrot beaked tortoises, *Homopus areolatus*—all quite probably very rare and spectacular—but almost anticlimactic after the wonders we had already seen and were about to encounter.

We entered the hot run, where many venomous snakes are kept and were personally introduced to a Mang Mountain pitviper, *Zhaoermia mangshanensis*, a venomous snake so calm that John described it as being "stapled to the bottom of its hidebox." Even so, it was one of those moments for which telephotos are so admirably suited. Aware of the need for the utmost caution with its venomous animals, the zoo has conspicuously posted the emergency protocol and phone numbers in every area with hot stuff as well as an alarm buzzer. The zoo stores a considerable amount of antivenin and each tank containing hot stuff is labeled with a red tag containing common and scientific name as well as the antivenin number (if any) and other pertinent information.

A large flat turtle in a big water trough sent me down memory lane, back to September 16, 1989, at the First World Congress of Herpetology where "We were treated to Peter Pritchard's presentation on 'the last turtle.' No they haven't all gone extinct. . . . The title refers to Peter's game of one—his desire to see, alive, every genus of turtle currently on the face of the earth. His last beastie was to be *Chitra indica*, an unusual Indian softshell turtle." [<http://ebeltz.net/column/chs/1989colu.html>] He chased reports of them through temples, to meat markets and finally saw one after incredible effort and fantastic tales of herping in the third world.

Here, a mere sixteen years later, in a wire-screened courtyard in downtown San Diego was a live *Chitra indica*! How time has changed everything I thought, and we moved on.

After a few more critters, we caught up with Don Boyer, the curator of herps and a group from PARC, Partners in Amphibian and Reptile Conservation, who were having a tour after their meeting. Rob Lovich is the PARC coordinator for California and he mentioned speaking to the CHS a few years ago with a big smile.

Following the enthusiastic curator around the critters again, it was interesting to get even more information about the nearly 1,500 animals in the collection, comparing the differences in emphasis between his perspective and John's. Finally he took the whole group to see the outdoor facilities known as "the Mesa" and the Klauber buildings, both on the planning board for updates, as well as the fantastic new herp quarantine facilities.

Wow. All that in about two hours. We barely had time to catch our breath before heading for the San Diego Herpetological Society meeting at the Botanical Gardens Casa del Prado, an outrageously ornate public building on Balboa Park's boulevard of Spanish-influenced museums and restaurants. It's a great resource to local nature organizations, many of which meet in the same room and can cross-pollinate by posting their newsletters and posters.

After checking in with their president, Israel Fierro, and chatting with some of their members including Bob Applegate, it was time to get started and show the 45 slides of central and eastern amphibians and reptiles as well as a few from our

2003-2004 Australian trip. We saw old pictures of CHS members as well as one of just about every species of herp found in northeastern Illinois and Indiana and a few more common to the east and the south. I did not show every salamander of the east even though we certainly have pictures of them all!

I talked a little about my upcoming book on frogs of the world, due out in October this year and how interesting it was to learn the similarities and differences between our North American species and those which occur on the other continents.

After some refreshments and some time to chat with newsletter editor Kyle Ward, and the other officers and regulars at the meeting, we headed out into the clear dry evening, graced with a full moon and back to Escondido. The next day, we tried to get a photo of Kermit the Frog's star on Hollywood Boulevard.

You know, it's not easy being green. And it's also not easy to be a big star's star on Academy Awards week when tons of metal scaffolding, tacky gold plastic statues and red banners are hung all down the boulevard—right on top of the names of all the “greatest stars of all time.” Guess it just goes to show you how fleeting fame really is, even in the self-appointed fame capital of the world. Add in a couple of rude security guards, car fumes, the heat, the haze and the traffic and we were grateful to escape L.A. on the nearest exit which led us up the coast on 101, back to the Bay Area and the redwoods. When we arrived home at 2 A.M., I'm sure at least one neighbor thought we'd been bar-hopping, not driving half the length of the western U.S. coastline in one day!

No good explanation

Stanley Trauth, a zoology professor at Arkansas State University, presented his findings on hellbenders at a working group meeting in St. Louis in November. Hellbenders (*Cryptobranchus* spp.) are not only disappearing, the few that are left have “gruesome open sores, tumors and missing limbs and eyes,” according to Trauth who added, “I'm at a loss, folks,” Trauth said. “We just don't have a good explanation for what's causing this.” He pointed out that 90 percent of the animals in one stream had serious abnormalities. In contrast, early work by Max Nickerson, University of Florida, during the late 1960s showed only five animals with problems out of a series of 202 hellbenders. [*St. Louis Post-Dispatch*, November 8, 2004, from Wes von Papineäu]

BC Leopard Frogs nearly gone

Chytrid fungus has nearly wiped out the northern leopard frog from the Canadian province of British Columbia, according to biologist Doug Adama. The frogs used to be one of the most common amphibians, but by 2000 they were found only in one marsh system and now the population may be down to only four breeding pairs. Chytrid fungus arrived on African clawed frogs brought to the new world for pregnancy testing. Either the clawed frogs or the fungus they carry escaped into the wild where it kills local frogs, which have no immunity or resistance to it. [*Vancouver BC The Province*, February 8, 2005, from Wes von Papineäu]

Many forms of action

- The *Joongang Ilbo* of Seoul, South Korea reported on February 2, 2005: “On the 99th day of a hunger strike to save salamanders from a railroad construction project, a Buddhist nun is gaining support from both governing and opposition lawmakers. Thirty-one lawmakers from the Uri and Grand National parties said yesterday they want Mount Cheonseong to undergo another examination to make sure that the construction of a tunnel through the mountain for Seoul-Busan express train service causes no environmental damage. ‘We urge another environmental check-up,’ said the lawmakers. ‘That is the only way to stop controversy, while stopping the Venerable Jiyul from continuing her protest. . . .’ Other nuns at the society said she refuses to talk but sits up sometimes to fold salamanders out of colored paper.” Her condition was reported as critical at last report.

- “Bali, Indonesia: Religious leaders and conservationists have taken an unprecedented step by coming together to secure a more positive future for Bali's sea turtles. Although green turtles have long played a significant, symbolic role in traditional Indonesian Hindu rituals and ceremonies, religious leaders have asked Balinese Hindus to stop using turtle meat in religious ceremonies until such time as the turtle population was deemed stable by the government. . . . With the realization of the scale of the crisis facing sea turtles, the high priests issued a seven-point recommendation. One high priest . . . suggested the use of turtle-shaped rice cakes or pictures of turtles as a substitute for turtle meat. Alternatively, a live turtle could be used for the purposes of the ritual and then released back into the wild.” The recommendations of this committee are headed upward, if the full convention of Hindu leaders adopts the proposal it will become Bhisama (religious decree) and have great effects across the subcontinent. [WWF Newsroom, February 25, 2005, from Wes von Papineäu]

- The January 31, 2005, editorial from the *Alabama Decatur Daily*: “Rattlesnake rodeos causing too much harm to continue. Whigham, Ga., a town of about 320 people near the Florida line, staged a rattlesnake rodeo Saturday for the 45th year, an event that attracts thousands and raises money for charity. Despite the amusement it provides those who attend and the money it raises, it should be stopped. The people of Whigham should find another way to raise money. It's not because rattlesnakes are high on most people's list of desirable creatures. For the majority, the only good rattlesnake is a dead one. With that said, it should be pointed out that rattlesnakes do a lot of good, killing rats and other pests that make our lives miserable. But during these rodeos, the snakes aren't out slithering about. And that's where the concern comes. Rattlesnakes tend to winter with gopher turtles in South Georgia and Florida, much of their habitat. A gopher turtle is usually in that same hole with the snake. The turtle is protected in Georgia and Florida, and is Georgia's state reptile. Snake hunters often use a long hose to dribble gasoline down the hole. The snake crawls out and the turtle dies. Although event sponsors discourage the gasoline method, they admit they have no control over the hunters. Last year, 350 rattlers were caught, so it's probably not far off to estimate that a

large number of these protected turtles died. Most of the larger rattlesnake rodeos have been canceled to help protect this turtle, but a few remain. Georgia once had three rodeos, but only this one remains. Gopher turtles, known during the Great Depression as ‘Hoover chickens,’ a reference to President Hoover and to the fact that they were hunted for food then, are seeing much of their habitat destroyed by the ever-expanding use of land. Because these rodeo events increase the threat to both the diamondback rattlesnake and the gopher turtle, they should cease.”

Your tax dollars continue to work

- “The former manager of Buenos Aires National Wildlife Refuge said he did the right thing, even though he was fined and put on administrative leave for moving federally protected tadpoles without a permit. ‘To me, \$3,500 was a small investment to save a species from extinction,’ said Wayne Shifflett, who was placed on leave more than a year ago for moving 400 Chiricahua leopard frog tadpoles without a permit. ‘Too bad it came out of my pocket because Arizona Game & Fish and (U.S.) Fish and Wildlife wouldn’t stand up for them,’ he said. ‘There surely would have been destruction of the whole population (had I not acted.)’ The discovery of the rare amphibians at the refuge south of Tucson was made in the mid-1980s, he said. ‘I took a picture of a leopard (frog) in 1986.’ But the drought that southern Arizona has endured for nearly a decade was threatening the frog, which was added to the list of endangered species in June 2002, he said. In 2003, staff members at the refuge hauled water daily to provide an environment for the animals to survive, but the schedule was too arduous to maintain, he said. After about a week Arizona Game & Fish issued a permit to move seven adults to a Tucson backyard with the hope that another permit would be issued to move them back to the refuge when conditions improved. A good crop of tadpoles developed, but there was fear that the adults, who don’t distinguish between their own young and other food, would eat them, he said. But Arizona Game & Fish, which declined to comment for this story, would not issue a permit for the move. . . . Shifflett said that because he had an endangered species permit, he decided to move the tadpoles to breeding tanks built on the refuge. ‘I moved about 400 and put them in there. That was in May 2003,’ he said. ‘We didn’t tell Arizona Game & Fish. Then on Dec. 18, (2003) I got a visit from two federal agents who said they were here to investigate me for moving the frogs onto the refuge,’ Shifflett said. ‘They proceeded to tell me about all the laws I had broken. I told them the only thing I did was try to save the Chiricahua leopard frog from becoming extirpated from the valley,’ Shifflett said. ‘But I gave them a statement about what I had done.’ In January 2004, Shifflett received a letter saying he had been put on administrative leave pending an investigation of the illegal movement of the frogs, he said. . . . [He retired instead.] Shifflett left his \$94,320-a-year job in May 2004, he said. Late last month he received a certified letter from U.S. Fish and Wildlife Service saying he was fined \$3,500 for illegally moving wildlife onto the refuge.” [*Tucson Citizen*, February 24, 2005]

- Some things he forgot to point out were included in a press

release from Public Employees for Environmental Responsibility which states: “This is the only prosecution on record of a wildlife refuge manager for a conservation-related offense. ‘Refuge managers who act boldly to protect wildlife should not be prosecuted; they should be commended,’ stated PEER Executive Director Jeff Ruch, who noted that the U.S. Attorney’s office in Arizona twice declined to prosecute Shifflett and that charges were ultimately filed out of Justice Department Headquarters in Washington, D.C. ‘While it is a mystery why Justice would use scarce prosecutorial resources to pursue this case, it is a certainty that this action reeks of slimy politics.’ Shifflett’s decision to move the tadpoles has saved the species from complete elimination on the refuge. The frogs are now thriving in ponds, tanks and a breeding facility for which taxpayers had already spent \$100,000 to facilitate the threatened leopard frogs’ reintroduction. Shifflett acted after Arizona Game & Fish had refused to issue a permit to a university researcher to move the frogs onto the refuge. ‘I have been asked many times by peers and friends if I had to make that decision again, would I have made the same decision and my answer is always the same: Without a doubt, it was the right decision for me and the resource,’ said Shifflett, who retired this May after a 38-year career in the U.S. Fish & Wildlife Service. ‘A former Director of the Service would always remind us “Refuge Managers are all about saving dirt and protecting critters.” Politics change but saving dirt and critters has always remained the only constant which has directed my decisions.’ Rather than spend months in his retirement fighting the criminal charges, Wayne Shifflett has decided to pay the fine. The criminal charges come more than a year and a half after his actions to save the frogs. The delay reflects months of back room pressure and meetings about whether Shifflett should be prosecuted even after he retired. ‘This case is the perfect illustration of how federal wildlife policy is now being set by pencil pushers and political schemers rather than by experienced, dedicated professionals,’ Ruch added. ‘Regardless of the costs, Wayne Shifflett’s decision will pay dividends to the restoration of the Sonoran Desert ecosystem for generations to come.’” [from Steve Spitzer]

Too much \$\$ and no ¢¢

“Forget saying it with flowers — at least 50 people in Bahrain have shelled out on live turtles to show their Valentines how much they care. There has been the usual rush for bouquets, soft toys and chocolates, but the more adventurous are getting the message across with turtles, with their loved one’s name written on the shell in waterproof silver and gold!” [*Bahrain Gulf Daily News*, February 14, 2005, from Wes von Papineau]

Thanks to Wes and Mike and the folks at the San Diego Herp Society, and to Bill Burnett, Paul Breese, G. E. Chow, Mary Beth Trilling, Ray Boldt, the Oregon Herp Society and others who have sent clippings in the last month which I’m saving up for next month! You can contribute too. Send whole pages of newspapers and magazines folded a minimum number of times to: Ellin Beltz, POB 1125, Ferndale, CA 95536.

Unofficial Minutes of the CHS Board Meeting, February 11, 2005

Lori King called the meeting to order at 7:32 P.M. Board member Deb Krohn was absent.

Officers' Reports

Recording Secretary: Melanie Aspan read the minutes of the January 14 board meeting. Corrections were made and the minutes were accepted.

Treasurer: Jim Hoffman gave the January financial report.

Membership Secretary: Steve Spitzer announced that the CHS membership count has remained steady at 663.

Vice-president: Professor Nathaniel Dominy will be February's speaker. In March Rebecca Christoffel will speak about the eastern massasauga outreach program she is involved with. Ron Humbert commented on how terrific Maureen Kearney's program was in January and all present agreed.

Publications Secretary: Mike Dloogatch related the reception of an email complaint over a piece published in the CHS *Bulletin*. The piece in question was "gossipy" in tone. Mike responded to this complaint with assurances that the piece was not mean-spirited but was intended as a humorous account.

Sergeant-at-arms: Ron Humbert announced the January general meeting count at 47.

Committee Reports

Shows:

- Arlington 2005: Jenny Vollman has negotiated ½ booth space at no cost. The CHS's total cost for the show will consist of two booth spaces plus an electricity fee. A decision was made to go ahead with the photo booth this year.
- Chicago Park District: Depending upon the outcome of the insurance discussion, the first show would take place April 6, 4-5 P.M.
- Notebaert Weekends: The next weekend that the CHS will be at the Notebaert Nature Museum will be March 5-6. The Museum has asked us to present on an additional date of March 24. In lieu of the first weekend of April, the next month's show weekend will be April 23-24. The Museum has also asked for an additional April date of April 21. All shows will be 10 A.M. – 3 P.M.
- ReptileFest: Steve Sullivan reminded everyone about the next ReptileFest meeting on February 12 at 10 A.M. at his home. Steve also announced the date of the following meeting as March 19 at Gary Fogel's home. The ad in *Reptiles* magazine has been eliciting responses. Responding to the surveys gathered at last year's 'Fest, an ad has been placed in *Chicago Parents* magazine. Information will also appear on their online calendar as well as their April printed calendar. Steve asked for ideas regarding where a motor home could be parked overnight for an attendee from out of state as it is not allowed on UIC property. Steve asked those present to add ReptileFest to any

favorite online calendars and place flyers at local museums.

- Salamander Safari: Ron Humbert announced this year's Salamander Safari at Plum Creek Nature Center, March 26, 10 A.M. - 3 P.M. Ron Humbert made a motion to allocate up to \$75 for refreshments for CHS attendees. Jenny Vollman seconded the motion and the motion passed with all in favor.
- Dinner with a Dinosaur 2005: Lori King related to the Board that this year's event will take place Tuesday, May 10 at the Chicago Cultural Center. Lori will report back on the animals which will be welcome this year.

Esther Lewis Memorial Library: Steve Sullivan thanked Ron and Dottie Humbert for the donation of the two-volume set, *The Venomous Reptiles of the Western Hemisphere*. He also presented other recent acquisitions: *The Biology of Pit Vipers* and *Snakes of Costa Rica*. Mike Dloogatch will be providing the biography of Esther Lewis for the memorial plaque.

Adoptions: Linda Malawy spoke about the funds which are growing in the Adoptions restricted fund. She would like to add to the release form a clause that would allow excess funds to be reallocated to the general fund at the discretion of the Board. Linda asked everyone for their opinions and also asked that everyone consider the possibilities and report back on their thoughts.

General Meetings: Herp of the month for February will be Geckos. Linda Malawy suggested that Sean Bober send a Herp of the Month reminder on the CHS Yahoo group before each general meeting to see if this boosts attendance. Also at the February meeting Deb Krohn will make a presentation on the American toad. The March Illinois Herp presentation will be on the bullsnake and will be presented by Mike Dloogatch. Ron Humbert will be offering back issues of herp-related magazines for \$1 apiece at upcoming meetings.

Grants: Lori King announced that the Grants Committee will meet Wednesday, February 16, to award the 2005 CHS Grants.

Conservation: Lori presented an article regarding the new display at the Shedd Aquarium for their Grand Cayman iguanas.

Old Business

North Park Village: Steve Spitzer announced that the contract for our meeting room has been signed by both parties.

State Reptile/Amphibian: Ron Humbert related that the proposal go to committee on February 17. The Bill should be presented to the full legislature sometime in March.

New Insurance Policy: Ron Humbert set out the terms of our current insurance policies. Linda Malawy set out the terms of the new insurance quote.

The meeting was adjourned at 10:16 P.M.

Respectfully submitted by Melanie Aspan, Recording Secretary.

Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail: GrmtRodent@aol.com.

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. We feed our colony a nutritionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. Mice starting from: pinkies, \$.17 each; fuzzies, \$.24 each; hoppers, \$.30 each; weanling, \$.42; adult, \$.48. Rats: starting with pinkies at \$.45 each, to XL at \$1.80 each. Discount prices available. We accept Visa, MC, Discover or money orders. PO Box 85, Alpine TX 79831. Call **toll-free** at (800) 720-0076 or visit our website: < <http://www.themousefactory.com> > .

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice available: small newborn pinkies up to jumbo adults. Prices start at \$25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: **New book**—*Snakes of Costa Rica* by Alejandro Solórzano, in English/Spanish, 842 color photos, 21 figs. & tables, distribution maps for all species, a must for anyone with an interest in tropical snakes, \$60 + \$5 shipping & handling. Also available, *Biology of the Vipers* (2002, Schuett et al., eds.) Order from Eagle Mountain Publishing, LC, 7705 N. Wyatt Earp Ave., Eagle Mountain UT 84043, (801) 789-4149 tel., (801) 789-4150 fax. E-mail: empub@msn.com. For additional information see www.eaglemountainpublishing.com

For sale: Two 1-foot Neodesha cage sets, each set includes matching hide box and water bowl, \$25 per set. Jim, (847) 534-4980.

For sale: Louisiana pinesnakes. Second and third generation from locality specific animals, 2003 & 2004 babies available, \$250– 400 each. Theron Magers, (318) 793-9413. E-mail: theronm@kriicket.net.

For sale: Now accepting reservations for rare and unusual garters—**Eastern**: normal \$25 each/2 for \$40, Florida \$25 each/2 for \$40, silver hets/possible het granite \$75, granites (axanthic) \$150, granite hets \$75, albinos \$195– \$250, hets \$95, possible hets \$45, flame × albino \$125, erythristic × albino \$125, flames \$100, erythristic \$100, melanistic \$35, snows \$395; **Red-sided**: normals \$25 each/2 for \$40, albinos \$375, het and possible het albino— inquire, double het snow \$225 pair, anerythristic \$100, het anerythristic \$50; **Plains**: normal \$25 each/2 for \$40, anerythristic \$40, double het snow \$50, albino (Nebraska albino × red Iowa albino) ?, axanthic \$95, albinos/snows market, quad hets \$75, red albino \$125, red albino hets \$40, Christmas albino \$125, super Christmas albino \$175, hybino \$195, possible het hybino \$35, piebald inquire; **Wandering**: normals \$25 each/2 for \$40, chocolate \$75, melanistics \$95, chocolate × melanistic \$45 each, albinos \$150, het albinos \$50; **California red-sided** \$125, **Eastern black-necked** \$95, **Florida blue-striped (similis)** \$40, **Santa Cruz** \$60. Scott Felzer, (919) 365-6120 EST. E-mail: sfelzersgarters@bellsouth.net www.gartersnakemorphs.com

For sale: c.b. '03 yellow anacondas, aggressive feeders, perfect health, about 2' long, \$100 each; also c.b. '04 reticulated pythons; beautiful hatchlings already feeding on adult mice. These guys are tiger siblings and are available for \$100/each as well. Personal checks, money orders and Paypal accepted. Out of state shipping available. If you have questions or would like to purchase an animal call Mark Petros, (847) 836-9426 or E-mail ballpython777@yahoo.com.

Herp Tours: Herp Belize! A field trip in search of reptiles and amphibians through some of the most unspoiled places left on earth. Dry season, March 15– 24 (reptile focus). Wet season, July 1– 10 (amphibian focus). Led by professional herpetologists. Hiking, canoeing, 4×4, boating. Photographic opportunities. Herp in diverse habitats. All inclusive. Catered meals and ice cold drinks. Limited availability. Full day snorkeling on barrier reef. For inquiries and reservations call 011-501-614-3896 (Belize). Email: bfree@direcway.com.

Herp Tours: Why pay more? Travel with the International Fauna Society, a 501 (c)3 not-for-profit organization, and experience the Costa Rican rainforest! Stay at the beautiful Esquinas Rainforest Lodge in the untouched herpetological paradise that is Piedras Blancas National Park. Meet new friends, relax in the naturally-filtered swimming pool or in the lush, fauna-filled tropical garden. Discounts for IFS and Chicago Herp Society members. For details, visit The International Fauna Society website at www.faunasociety.org or E-mail: info@faunasociety.org.

Herp tours: Adventure trips to **Madagascar**! Journey somewhere truly unique to seek and photograph nature on the world's least-studied mini-continent. For maximum herp fun and discovery, join Bill Love as we go where few people will ever venture in their lives. Let his experience assure a comfortable tour finding the most colorful and bizarre species on the planet! Get all the details at Blue Chameleon Ventures' comprehensive new website: < <http://www.bluechameleon.org> > , E-mail: bill@bluechameleon.org, or call (239) 728-2390.

Herp tours: The beautiful Amazon! Costa Rica from Atlantic to Pacific! Esquinas Rainforest Lodge, the Osa Peninsula, Santa Rosa National Park, and a host of other great places to find herps and relax. Remember, you get what you pay for, so go with the best! GreenTracks, Inc. offers the finest from wildlife tours to adventure travel, led by internationally acclaimed herpers and naturalists. Visit our website < <http://www.greentracks.com> > or call (800) 892-1035, e-mail: info@greentracks.com

Reptile Show: Captive-bred only. Monona Community Center, 1011 Nichols Road, Madison WI. Saturday, April 23, 2005, 10 A.M. to 4 P.M., \$4 admission, \$2 under 12. Vendors tables, \$25. Info: wireptileshows@hotmail.com or (608) 238-2891

Wanted: Female ball pythons, adults preferred but smaller animals also considered. I am a professional breeder specializing in ball pythons and I can assure you that your animal will be provided with excellent care and optimal living conditions. Mark Petros, (847) 836-9426; ballpython777@yahoo.com.

Wanted: I'm looking for my soulmate. I want to settle down to a family before it is too late. But I have this problem. . . . When we get into hobbies and interests: old popular records, jazz and show tunes, and antique electronics are fine, but when I mention turtles, "What, are you crazy?" So maybe this is a better place to look. Please don't try to separate me from my turtles—at least not most of them. If interested, please drop a line to Ellis Jones, 1000 Dell, Northbrook IL 60062, telling a bit about yourself and giving a phone number.



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News and Announcements

2005 CHS GRANT RECIPIENTS

The CHS Grants Committee has chosen the CHS grant recipients for 2005. The committee consisted of John Bailey, Matt Campbell, Byron de la Navarre, DVM, Michael Dloogatch and Lori King. This year we received 21 applications, as usual far exceeding the number of grants that could be awarded based on available funds. After a difficult decision process, eight grants were awarded, in varying amounts, as follows:

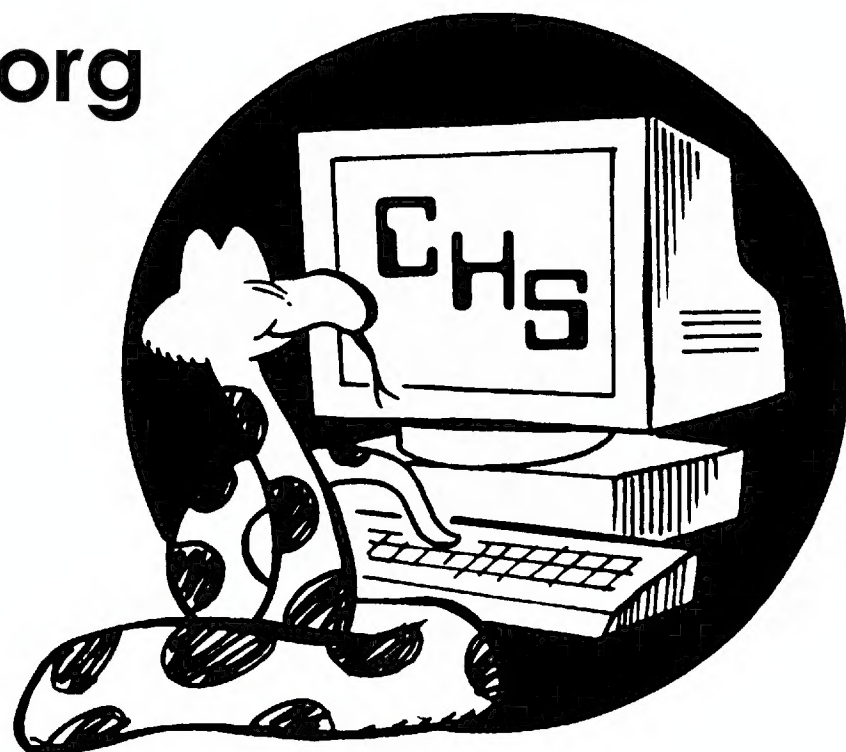
- Whitney J. Banning, University of Illinois, Urbana-Champaign. “Resource Partitioning along a Spatial Gradient in a Freshwater Turtle Community Study in Illinois,” \$500.
- Zach Felix, Center for Forestry and Ecology, Alabama A&M University. “Microhabitat and Movement Patterns of the Eastern Box Turtle (*Terrapene c. carolina*) in Forest Stands Managed for Timber Production,” \$500.
- Alan Kardon, 21947 Pelican Creek, San Antonio, Texas. “Life History Traits of *Crotalus polystictus*: A Long-term Mark–Recapture Study,” \$500.
- Ali M. Rabatsky, Department of Biology, University of Louisiana (Lafayette). “Vestigialization of the Rattle in Three Insular Rattlesnake Species,” \$500.
- Anne Readell, Illinois Natural History Survey. “Effect of Habitat Degradation on the Health and Conservation of Painted Turtles (*Chrysemys picta*),” \$500.
- Amanda L. Subalusky, Department of Wildlife and Fisheries Sciences, Texas A&M University. “The Role of Seasonal Wetlands in the Ecology of the American Alligator,” \$500.
- Christopher A. Conner, University of Missouri. “The Permeability of Altered Habitat to Migration in Forest-dependent Amphibians,” \$300.
- Daniel A. Warner, School of Biological Sciences, The University of Sydney. “The Adaptive Significance of Temperature-dependent Sex Determination in an Australian Agamid Lizard,” \$300.

Next time you surf the WorldWide Web, crawl, run, slither, slide, jump, or hop over to the CHS web site!

www.chicagoherp.org

You'll find:

- **Announcements**
- **CHS animal adoption service**
- **CHS events calendar & information**
- **Herp news**
- **Herp links**
- **Meeting/guest speaker information**
- **Photos of Illinois amphibians & reptiles**
- **Much, much more!**



Chicagoherp.org is accepting applications for banner advertisements or links from herpetoculturists and manufacturers of herp-related products. Visit the site and contact the webmaster for details on how you can sponsor CHS!

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, March 30, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. The featured speaker will be **Rebecca Christoffel**, a doctoral candidate in the Department of Fisheries and Wildlife at Michigan State University. Rebecca, who received a CHS grant for this project two years ago, will describe her public education and outreach efforts in southeast Michigan: "Learning to Live with the Eastern Massasauga Rattlesnake."

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago's newest museum — the **Peggy Notebaert Nature Museum**. This beautiful new building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the April 15 board meeting, to be held at the North Park Village Administration Building, 5801 North Pulaski Road, Chicago. To get there take the Edens Expressway, I-94, and exit at Peterson eastbound. Go a mile east to Pulaski, turn right and go south to the first traffic light. Turn left at the light into the North Park Village complex. At the entrance is a stop sign and a guardhouse. When you come to a second stop sign, the administration building is the large building ahead and to your left. There is a free parking lot to the left and behind the building.

The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info call Lisa Koester, (773) 508-0034, or visit the CTC website: <http://www.geocities.com/~chicagoturtle>.

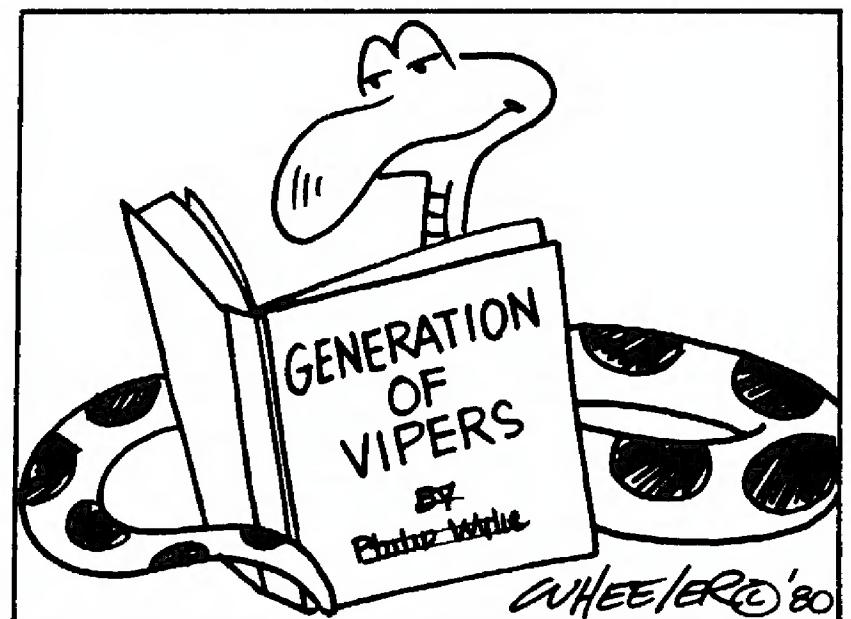
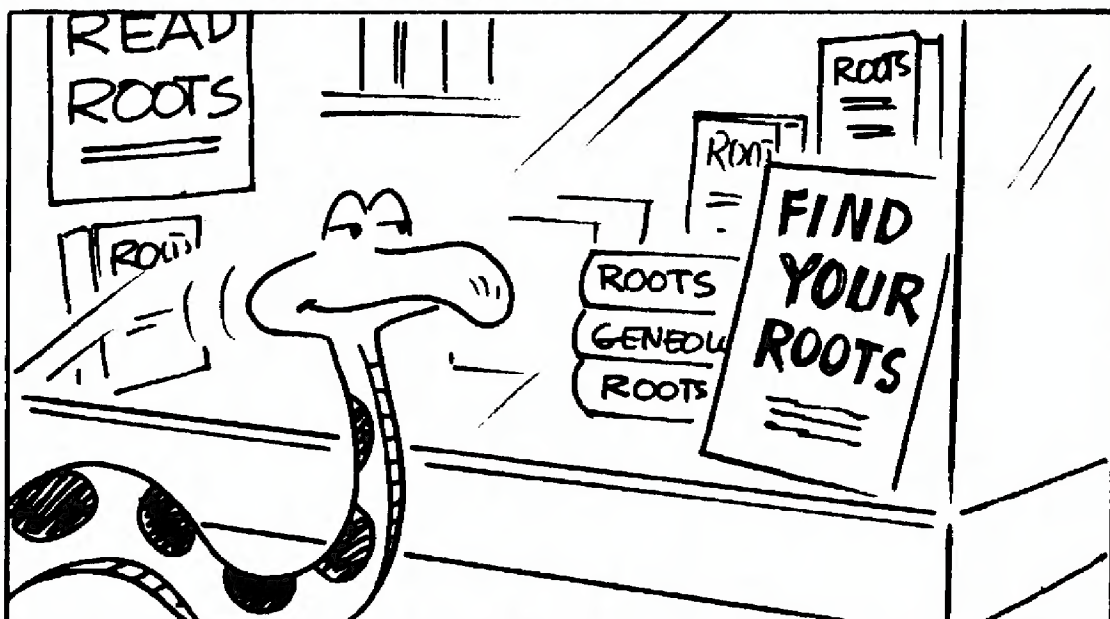
2005 SALAMANDER SAFARI

This year, the annual CHS Salamander Safari will be held on Saturday, March 26, 10 A.M. – 3 P.M., beginning at the Plum Creek Nature Center at Goodenow Grove Forest Preserve in Will County. Goodenow Grove is south of Crete, Illinois, 1¼ miles east of the intersection of Route 1 and Route 394 on Goodenow Road. If you need directions to get to this area, call Steve Spitzer at (773) 262-1847. From the nature center we will drive to other Forest Preserve District of Will County sites to search for amphibians. Species found or heard calling in previous inventories include spotted salamanders, blue-spotted salamanders, gray treefrogs, spring peepers, chorus frogs, bullfrogs, green frogs, and northern leopard frogs. Species not yet found but possibly occurring (or occurring at preserves nearby) include newts and wood frogs. As in past safaris, CHS members are encouraged to bring interesting amphibians from their personal collections for photography and display purposes. Coffee, juice and donuts will be provided, and a good time will be had by all!

HERP OF THE MONTH

Each monthly meeting will showcase a different herp. CHS members are urged to bring one specimen of the "Herp of the Month" to be judged against the entries from other CHS members. Prizes will be awarded to the top three winners as follows: 1st place—6 raffle tickets at next meeting; 2nd place—4 raffle tickets at next meeting; 3rd place—2 raffle tickets at next meeting. For March **bearded dragons** will be the Herp of the Month.

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